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BOOK III.

OF WORDS.

CHAP. VII.

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SECT.

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3, 4. They ſhow what relation the mind gives to its own thoughts.
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SECT.

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CHAP. IX.

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SECT.

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7. Secondly, becauſe they have no ſtandards.
8. Propriety not a ſufficient remedy.
9. The way of learning theſe names contributes alſo to their doubtfulneſs.
10. Hence unavoidable obſcurity in ancient authors.
11. Names of ſubſtances, of doubtful ſignification.
12. Names of ſubſtances referred, firſt, to real eſſences, that cannot be known.
13, 14. Secondly, to co-exiſting qualities, which are known but imperfectly.
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18. The names of ſimple ideas, the leaſt doubtful.
19. And

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SECT.

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4. Occaſioned by learning names, before the ideas they belong to.
5. Secondly, a ſteady application of them.
6. Thirdly, affected obſcurity, by wrong application.
7. Logic and diſpute have much contributed to this.
8. Calling it ſubtilty.
9. This learning very little benefits ſociety.
10. But deſtroys the inſtruments of knowledge and communication.
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13. And ought not to paſs for learning.
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SECT.

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3. But yet neceſſary to philoſophy.
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5. Obſtinacy.
6. And wrangling.
7. Inſtance, bat and bird.
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10. And diſtinct and conformable in ſubſtances.
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12. Fourthly, to make known their meaning.
13. And that three ways.
14. Firſt,

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BOOK IV.

Of KNOWLEDGE and OPINION.

CHAP. I.

Of knowledge in general.

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5. Secondly, relation.
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7. Fourthly, of real exiſtence.
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5. Not without precedent doubt.
6. Not ſo clear.
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10—13. Why it has been ſo thought.
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4. Fourthly, not demonſtrative knowledge.
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19. Two things have made moral ideas thought incapable of demonſtration. Their complexedneſs and want of ſenſible repreſentations.
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22. Our ignorance great.
23. Firſt, one cauſe of it, want of ideas, either ſuch as we have no conception of, or ſuch as particularly we have not.
24. Becauſe of their remoteneſs, or,
25. Becauſe of their minuteneſs.
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SECT.

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4. As, firſt, all ſimple ideas do.
5. Secondly, all complex ideas, except of ſubſtances.
6. Hence the reality of mathematical knowledge.
7. And of moral.
8. Exiſtence not required to make it real.
9. Nor will it be leſs true, or certain, becauſe moral ideas are of our own making and naming.
10. Miſ-naming diſturbs not the certainty of the knowledge.
11. Ideas of ſubſtances have their archetypes without us.
12. So far as they agree with theſe, ſo far our knowledge concerning them is real.

13. In our inquiries about ſubſtances, we muſt conſider ideas, and not confine our thoughts to names, or ſpecies ſuppoſed ſet out by names.
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16. Monſters.
17. Words and ſpecies.
18. Recapitulation.

CHAP. V.

Of truth in general.

SECT.

1. What truth is.
2. A right joining, or ſeparating of ſigns; i. e. ideas or words.
3. Which make mental, or verbal propoſitions.
4. Mental propoſitions are very hard to be treated of.
5. Being nothing but joining, or ſeparating ideas, without words.
6. When mental propoſitions contain real truth, and when verbal.
7. Objection againſt verbal truth, that thus it may be all chimerical.
8. Anſwered, real truth is about ideas agreeing to things.
9. Falſhood is the joining of names, otherwiſe than their ideas agree.
10. General propoſitions to be treated of more at large.
11. Moral and metaphyſical truth.

CHAP. VI.

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SECT.

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2. General truths hardly to be underſtood, but in verbal propoſitions.
3. Certainty two-fold, of truth, and of knowledge.
4. No propoſition can be known to be true, where the eſſence of each ſpecies mentioned, is not known.
5. This more particularly concerns ſubſtances.
6. The truth of few univerſal propoſitions concerning ſubſtances, is to be known.
7. Becauſe co-exiſtence of ideas in few caſes is to be known.
8, 9. Inſtance in gold.
10. As far as any ſuch co-exiſtence can be known, ſo far univerſal propoſitions may be certain. But this will go but a little way, becauſe,
11, 12. The qualities, which make our complex ideas of ſubſtances, depend moſtly on external, remote, and unperceived cauſes.
13. Judgment may reach farther, but that is not knowledge.
14. What is requiſite for our knowledge of ſubſtances.
15. Whilſt our ideas of ſubſtances contain not their real conſtitutions, we can make but few general, certain propoſitions concerning them.
16. Wherein lies the general certainty of propoſitions.

CHAP. VII.

Of maxims.

SECT.

1. They are ſelf-evident.
2. Wherein that ſelf-evidence conſiſts.
3. Self-evidence not peculiar to received axioms.
4. Firſt,

4. First, as to identity and diversity, all propositions are equally self-evident.
5. Secondly, in co-existence, we have few self-evident propositions.
6. Thirdly, in other relations we may have.
7. Fourthly, concerning real existence, we have none.
8. These axioms do not much influence our other knowledge.
9. Because they are not the truths the first known.
10. Because on them the other parts of our knowledge do not depend.
11. What use these general maxims have.
12. Maxims, if care be not taken in the use of words, may prove contradictions.
13. Instance in vacuum.
14. They prove not the existence of things without us.
15. Their application dangerous about complex ideas.
16—18. Instance in man.
19. Little use of these maxims, in proofs, where we have clear and distinct ideas.
20. Their use dangerous, where our ideas are confused.

CHAP. VIII.

Of trifling propositions.

SECT.

1. Some propositions bring no increase to our knowledge.
2, 3. As, first, identical propositions.
4. Secondly, when a part of any complex idea is predicated of the whole.
5. As part of the definition of the term defined.
6. Instance, man and palfry.
7. For this teaches but the signification of words.
8. But no real knowledge.
9. General propositions, concerning substances, are often trifling.
10. And why.
11. Thirdly, using words variously, is trifling with them.
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CHAP. IX.

Of our knowledge of existence.

SECT.

1. General, certain propositions concern not existence.
2. A threefold knowledge of existence.
3. Our knowledge of our own existence, is intuitive.

CHAP. X.

Of the existence of a God.

SECT.

1. We are capable of knowing certainly that there is a God.
2. Man knows that he himself is.
3. He knows also, that nothing cannot produce a being, therefore something eternal.
4. That eternal being must be most powerful.
5. And most knowing.
6. And therefore God.
7. Our idea of a most perfect being, not the sole proof of a God.
8. Something from eternity.
9. Two sorts of beings, cogitative and incogitative.
10. In-

10. Incogitative being cannot produce a cogitative.
11, 12. Therefore there has been an eternal wisdom.
13. Whether material, or no.
14. Not material, first, because every particle of matter is not cogitative.
15. Secondly, one particle alone of matter cannot be cogitative.
16. Thirdly, a system of incogitative matter cannot be cogitative.
17. Whether in motion or at rest.
18, 19. Matter not co-eternal with an eternal mind.

CHAP. XI.

Of the knowledge of the existence of other things.

SECT.

1. Is to be had only by sensation.
2. Instance, whiteness of this paper.
3. This, though not so certain as demonstration, yet may be called knowledge, and proves the existence of things without us.
4. First, because we cannot have them but by the inlets of the senses.
5. Secondly, because an idea from actual sensation, and another from memory, are very distinct perceptions.
6. Thirdly, pleasure or pain, which accompanies actual sensation, accompanies not the returning of those ideas, without the external objects.
7. Fourthly, our senses assist one another's testimony of the existence of outward things.
8. This certainty is as great as our condition needs.
9. But reaches no farther than actual sensation.
10. Folly to expect demonstration in every thing.
11. Past existence is known by memory.
12. The existence of spirits not knowable.
13. Particular propositions concerning existence, are knowable.
14. And general propositions concerning abstract ideas.

CHAP. XII.

Of the improvement of our knowledge.

SECT.

1. Knowledge is not from maxims.
2. (The occasion of that opinion.)
3. But from the comparing clear and distinct ideas.
4. Dangerous to build upon precarious principles.
5. This no certain way to truth.
6. But to compare clear, complete ideas under steady names.
7. The true method of advancing knowledge, is by considering our abstract ideas.
8. By which, morality, also, may be made clearer.
9. But knowledge of bodies is to be improved only by experience.
10. This may procure us convenience, not science.
11. We are fitted for moral knowledge, and natural improvements.
12. But must beware of hypotheses and wrong principles.
13. The

13. The true use of hypotheses.
14. Clear and distinct ideas, with settled names, and the finding of those, which show their agreement or disagreement, are the ways to enlarge our knowledge.
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SECT.
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CHAP. XV.

Of probability.

SECT.
1. Probability is the appearance of agreement, upon fallible proofs.
2. It is to supply the want of knowledge.
3. Being that, which makes us presume things to be true, before we know them to be so.
4. The grounds of probability are two; conformity with our own experience, or the testimony of others experience.
5. In this all the arguments, pro and con, ought to be examined, before we come to a judgment.
6. They being capable of great variety.

CHAP. XVI.

Of the degrees of assent.

SECT.
1. Our assent ought to be regulated by the grounds of probability.
2. These cannot be always actually in view, and then we must content ourselves with the remembrance, that we once saw ground for such a degree of assent.
3. The ill consequence of this, if our former judgment were not rightly made.
4. The right use of it, is mutual charity and forbearance.
5. Probability is either of matter of fact, or speculation.
6. The concurrent experience of all other men with ours produces assurance approaching to knowledge.
7. Unquestionable testimony and experience for the most part produce confidence.
8. Fair testimony, and the nature of the thing indifferent, produces also confident belief.

9. Ex-

9. Experience and teſtimonies claſhing, infinitely vary the degrees of probability.
10. Traditional teſtimonies, the farther removed, the leſs their proof.
11. Yet hiſtory is of great uſe.
12. In things, which ſenſe cannot diſcover, analogy is the great rule of probability.
13. One caſe, where contrary experience leſſens not the teſtimony.
14. The bare teſtimony of revelation is the higheſt certainty.

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SECT.

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2. Wherein reaſoning conſiſts.
3. Its four parts.
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5. Helps little in demonſtration, leſs in probability.
6. Serves not to increaſe our knowledge, but fence with it.
7. Other helps ſhould be ſought.
8. We reaſon about particulars.
9. Firſt, reaſon fails us for want of ideas.
10. Secondly, becauſe of obſcure and imperfect ideas.
11. Thirdly, for want of intermediate ideas.
12. Fourthly, becauſe of wrong principles.
13. Fifthly, becauſe of doubtful terms.
14. Our higheſt degree of knowledge is intuitive, without reaſoning.
15. The next is demonſtration by reaſoning.
16. To ſupply the narrowneſs of this, we have nothing but judgment upon probable reaſoning.
17. Intuition, demonſtration, judgment.
18. Conſequences of words, and conſequences of ideas.
19. Four ſorts of arguments: firſt, ad verecundiam.
20. Secondly, ad ignorantiam.
21. Thirdly, ad hominem.
22. Fourthly, ad judicium.
23. Above, contrary, and according to reaſon.
24. Reaſon and faith not oppoſite.

CHAP. XVIII.

Of faith and reaſon, and their diſtinct provinces.

SECT.

1. Neceſſary to know their boundaries.
2. Faith and reaſon what, as contra-diſtinguiſhed.
3. No new ſimple idea can be conveyed by traditional revelation.
4. Traditional revelation may make us know propoſitions, knowable alſo by reaſon, but not with the ſame certainty that reaſon doth.
5. Revelation cannot be admitted, againſt the clear evidence of reaſon.
6. Traditional revelation much leſs.
7. Things above reaſon,
8. Or not contrary to reaſon, if revealed, are matter of faith.
9. Revelation in matters where reaſon cannot judge, or but probably, ought to be hearkened to.
10. In

10. In matters, where reaſon can afford certain knowledge, that is to be hearkened to.
11. If the boundaries be not ſet between faith and reaſon, no enthuſiaſm, or extravagancy in religion, can be contradicted.

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Of enthuſiaſm.

SECT.
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5. Riſe of enthuſiaſm.
6, 7. Enthuſiaſm.
8, 9. Enthuſiaſm miſtaken for ſeeing and feeling.
10. Enthuſiaſm, how to be diſcovered.
11. Enthuſiaſm fails of evidence, that the propoſition is from God.
12. Firmneſs of perſuaſion, no proof that any propoſition is from God.
13. Light in the mind, what.
14. Revelation muſt be judged of by reaſon.
15, 16. Belief, no proof of revelation.

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Of wrong aſſent, or errour.

SECT.
1. Cauſes of errour.
2. Firſt, want of proofs.
3. Obj. What ſhall become of thoſe who want them, anſwered.
4. People hindered from inquiry.
5. Secondly, want of ſkill to uſe them.
6. Thirdly, want of will to uſe them.
7. Fourthly, wrong meaſures of probability; whereof,
8—10. Firſt, doubtful propoſitions, taken for principles.
11. Secondly, received hypotheſes.
12. Thirdly, predominant paſſions.
13. The means of evading probabilities, 1ſt, ſuppoſed fallacy.
14. 2dly, ſuppoſed arguments for the contrary.
15. What probabilities determine the aſſent.
16. Where it is in our power to ſuſpend it.
17. Fourthly, authority.
18. Men not in ſo many errours, as is imagined.

CHAP. XXI.
Of the diviſion of the ſciences.

SECT.
1. Three ſorts.
2. Firſt, Phyſica.
3. Secondly, Practica.
4. Thirdly, Σημειωτικη.
5. This is the firſt diviſion of the objects of knowledge.

OF

Human Underſtanding.

BOOK III. CHAP. VII.

Of Particles.

§. 1. BESIDES words which are names of ideas in the mind, there are a great many others that are made uſe of, to ſignify the connexion that the mind gives to ideas, or propoſitions, one with another. The mind, in communicating its thought to others, does not only need ſigns of the ideas it has then before it, but others alſo, to ſhow or intimate ſome particular action of its own, at that time, relating to thoſe ideas. This it does ſeveral ways; as is, and is not, are the general marks of the mind, affirming or denying. But beſides affirmation or negation, without which there is in words no truth or falſhood, the mind does, in declaring its ſentiments to others, connect not only the parts of propoſitions, but whole ſentences one to another, with their ſeveral relations and dependencies, to make a coherent diſcourſe.

Particles connect parts, or whole ſentences together.

§. 2. The words, whereby it ſignifies what connexion it gives to the ſeveral affirmations and negations, that it unites in one continued reaſoning or narration, are generally called particles; and it is in the right uſe of theſe, that more particularly conſiſts the clearneſs and beauty of a good ſtyle. To think well, it is not enough that a

In them conſiſts the art of well-ſpeaking.

man has ideas clear and distinct in his thoughts, nor that he observes the agreement or disagreement of some of them; but he must think in train, and observe the dependence of his thoughts and reasonings upon one another. And to express well such methodical and rational thoughts, he must have words to show what connexion, restriction, distinction, opposition, emphasis, &c. he gives to each respective part of his discourse. To mistake in any of these, is to puzzle, instead of informing his hearer; and therefore it is that those words which are not truly by themselves the names of any ideas, are of such constant and indispensable use in language, and do much contribute to men's well expressing themselves.

They show what relation the mind gives to its own thoughts.

§. 3. This part of grammar has been perhaps as much neglected, as some others over-diligently cultivated. It is easy for men to write, one after another, of cases and genders, moods and tenses, gerunds and supines: in these, and the like, there has been great diligence used; and particles themselves, in some languages, have been, with great show of exactness, ranked into their several orders. But though prepositions and conjunctions, &c. are names well known in grammar, and the particles contained under them carefully ranked into their distinct subdivisions; yet he who would show the right use of particles, and what significancy and force they have, must take a little more pains, enter into his own thoughts, and observe nicely the several postures of his mind in discoursing.

§. 4. Neither is it enough, for the explaining of these words, to render them, as is usual in dictionaries, by words of another tongue which come nearest to their signification: for what is meant by them is commonly as hard to be understood in one, as another language. They are all marks of some action, or intimation of the mind; and therefore to understand them rightly, the several views, postures, stands, turns, limitations, and exceptions, and several other thoughts of the mind, for which we have either none, or very deficient names, are diligently to be studied. Of these there is a great variety,

riety, much exceeding the number of particles that moſt languages have to expreſs them by; and therefore it is not to be wondered that moſt of theſe particles have divers, and ſometimes almoſt oppoſite ſignifications. In the Hebrew tongue there is a particle conſiſting of but one ſingle letter, of which there are reckoned up, as I remember, ſeventy, I am ſure above fifty ſeveral ſignifications.

Inſtance in But.

§. 5. But is a particle, none more familiar in our language; and he that ſays it is a diſcretive conjunction, and that it anſwers *ſed* in Latin, or *mais* in French, thinks he has ſufficiently explained it. But it ſeems to me to intimate ſeveral relations the mind gives to the ſeveral propoſitions or parts of them, which it joins by this monoſyllable.

Firſt, "but to ſay no more:" here it intimates a ſtop of the mind in the courſe it was going, before it came quite to the end of it.

Secondly, "I ſaw but two plants:" here it ſhows, that the mind limits the ſenſe to what is expreſſed, with a negation of all other.

Thirdly, "you pray; but it is not that God would bring you to the true religion,"

Fourthly, "but that he would confirm you in your own." The firſt of theſe Buts intimates a ſuppoſition in the mind of ſomething otherwiſe than it ſhould be; the latter ſhows, that the mind makes a direct oppoſition between that, and what goes before it.

Fifthly, "all animals have ſenſe; but a dog is an animal:" here it ſignifies little more, but that the latter propoſition is joined to the former, as the minor of a ſyllogiſm.

This matter but lightly touched here.

§. 6. To theſe, I doubt not, might be added a great many other ſignifications of this particle, if it were my buſineſs to examine it in its full latitude, and conſider it in all the places it is to be found: which if one ſhould do, I doubt, whether in all thoſe manners it is made uſe of, it would deſerve the title of diſcretive, which grammarians give to it. But I intend not here a full

explication of this ſort of ſigns. The inſtances I have given in this one, may give occaſion to reflect on their uſe and force in language, and lead us into the contemplation of ſeveral actions of our minds in diſcourſing, which it has found a way to intimate to others by theſe particles; ſome whereof conſtantly, and others in certain conſtructions, have the ſenſe of a whole ſentence contained in them.

CHAP. VIII.

Of Abſtract and Concrete Terms.

Abſtract terms not predicable one of another, and why.

§. 1. THE ordinary words of language, and our common uſe of them, would have given us light into the nature of our ideas, if they had been but conſidered with attention. The mind, as has been ſhown, has a power to abſtract its ideas, and ſo they become eſſences, general eſſences, whereby the ſorts of things are diſtinguiſhed. Now each abſtract idea being diſtinct, ſo that of any two the one can never be the other, the mind will, by its intuitive knowledge, perceive their difference; and therefore in propoſitions no two whole ideas can ever be affirmed one of another. This we ſee in the common uſe of language, which permits not any two abſtract words, or names of abſtract ideas, to be affirmed one of another. For how near of kin ſoever they may ſeem to be, and how certain ſoever it is, that man is an animal, or rational, or white, yet every one at firſt hearing perceives the falſhood of theſe propoſitions; humanity is animality, or rationality, or whiteneſs: and this is as evident, as any of the moſt allowed maxims. All our affirmations then are only inconcrete, which is the affirming, not one abſtract idea to be another, but one abſtract idea to be joined to another; which abſtract ideas, in ſubſtances, may be of any ſort; in all the reſt, are little elſe but of relations; and

and in ſubſtances, the moſt frequent are of powers; v. g. "a man is white," ſignifies, that the thing that has the eſſence of a man, has alſo in it the eſſence of whiteneſs, which is nothing but a power to produce the idea of whiteneſs in one, whoſe eyes can diſcover ordinary objects; or "a man is rational," ſignifies that the ſame thing that hath the eſſence of a man, hath alſo in it the eſſence of rationality, i. e. a power of reaſoning.

They ſhow the difference of our ideas.

§. 2. This diſtinction of names ſhows us alſo the difference of our ideas: for if we obſerve them, we ſhall find that our ſimple ideas have all abſtract, as well as concrete names; the one whereof is (to ſpeak the language of grammarians) a ſubſtantive, the other an adjective; as whiteneſs, white, ſweetneſs, ſweet. The like alſo holds in our ideas of modes and relations; as juſtice, juſt; equality, equal; only with this difference, that ſome of the concrete names of relations, amongſt men chiefly, are ſubſtantives; as paternitas, pater; whereof it were eaſy to render a reaſon. But as to our ideas of ſubſtances, we have very few or no abſtract names at all. For though the ſchools have introduced animalitas, humanitas, corporietas, and ſome others; yet they hold no proportion with that infinite number of names of ſubſtances, to which they never were ridiculous enough to attempt the coining of abſtract ones: and thoſe few that the ſchools forged, and put into the mouths of their ſcholars, could never yet get admittance into common uſe, or obtain the licence of public approbation. Which ſeems to me at leaſt to intimate the confeſſion of all mankind, that they have no ideas of the real eſſences of ſubſtances, ſince they have not names for ſuch ideas: which no doubt they would have had, had not their conſciouſneſs to themſelves of their ignorance of them kept them from ſo idle an attempt. And therefore though they had ideas enough to diſtinguiſh gold from a ſtone, and metal from wood; yet they but timorouſly ventured on ſuch terms, as aurietas and ſaxietas, metallietas and lignietas, or the like names, which ſhould pretend to ſignify the real eſſences of thoſe ſubſtances, whereof they knew they had no ideas. And indeed it

was only the doctrine of ſubſtantial forms, and the confidence of miſtaken pretenders to a knowledge that they had not, which firſt coined, and then introduced animalitas, and humanitas, and the like; which yet went very little farther than their own ſchools, and could never get to be current amongſt underſtanding men. Indeed, humanitas was a word familiar amongſt the Romans, but in a far different ſenſe, and ſtood not for the abſtract eſſence of any ſubſtance; but was the abſtracted name of a mode, and its concrete humanus, not homo.

CHAP. IX.

Of the Imperfection of Words.

Words are uſed for recording and communicating our thoughts.

§. 1. FROM what has been ſaid in the foregoing chapters, it is eaſy to perceive what imperfection there is in language, and how the very nature of words makes it almoſt unavoidable for many of them to be doubtful and uncertain in their ſignifications. To examine the perfection or imperfection of words, it is neceſſary firſt to conſider their uſe and end: for as they are more or leſs fitted to attain that, ſo are they more or leſs perfect. We have, in the former part of this diſcourſe, often upon occaſion mentioned a double uſe of words.

Firſt, one for the recording of our own thoughts.

Secondly, the other for the communicating of our thoughts to others.

Any words will ſerve for recording.

§. 2. As to the firſt of theſe, for the recording our own thoughts for the help of our own memories, whereby, as it were, we talk to ourſelves, any words will ſerve the turn. For ſince ſounds are voluntary and indifferent ſigns of any ideas, a man may uſe what words he pleaſes, to ſignify his own ideas to himſelf: and there will be no imperfection in them, if he conſtantly uſe the ſame ſign

ſign for the ſame idea; for then he cannot fail of having his meaning underſtood, wherein conſiſts the right uſe and perfection of language.

Communication by words civil or philoſophical.

§. 3. Secondly, as to communication of words, that too has a double uſe.

I. Civil.

II. Philoſophical.

Firſt, by their civil uſe, I mean ſuch a communication of thoughts and ideas by words, as may ſerve for the upholding common converſation and commerce, about the ordinary affairs and conveniencies of civil life, in the ſocieties of men one amongſt another.

Secondly, by the philoſophical uſe of words, I mean ſuch an uſe of them, as may ſerve to convey the preciſe notions of things, and to expreſs, in general propoſitions, certain and undoubted truths, which the mind may reſt upon, and be ſatisfied with, in its ſearch after true knowledge. Theſe two uſes are very diſtinct; and a great deal leſs exactneſs will ſerve in the one than in the other, as we ſhall ſee in what follows.

The imperfection of words is the doubtfulneſs of their ſignification.

§. 4. The chief end of language in communication being to be underſtood, words ſerve not well for that end, neither in civil nor philoſophical diſcourſe, when any word does not excite in the hearer the ſame idea which it ſtands for in the mind of the ſpeaker. Now ſince ſounds have no natural connexion with our ideas, but have all their ſignification from the arbitrary impoſition of men, the doubtfulneſs and uncertainty of their ſignification, which is the imperfection we here are ſpeaking of, has its cauſe more in the ideas they ſtand for, than in any incapacity there is in one ſound more than in another, to ſignify any idea: for in that regard they are all equally perfect.

That then which makes doubtfulneſs and uncertainty in the ſignification of ſome more than other words, is the difference of ideas they ſtand for.

Cauſes of their imperfection.

§. 5. Words having naturally no ſignification, the idea which each ſtands for muſt be learned and retained by thoſe who would exchange thoughts, and hold intelligible

diſcourſe with others in any language. But this is hardeſt to be done, where,

Firſt, the ideas they ſtand for are very complex, and made up of a great number of ideas put together.

Secondly, where the ideas they ſtand for have no certain connexion in nature; and ſo no ſettled ſtandard, any where in nature exiſting, to rectify and adjuſt them by.

Thirdly, when the ſignification of the word is referred to a ſtandard, which ſtandard is not eaſy to be known.

Fourthly, where the ſignification of the word, and the real eſſence of the thing, are not exactly the ſame.

Theſe are difficulties that attend the ſignification of ſeveral words that are intelligible. Thoſe which are not intelligible at all, ſuch as names ſtanding for any ſimple ideas, which another has not organs or faculties to attain; as the names of colours to a blind man, or ſounds to a deaf man; need not here be mentioned.

In all theſe caſes we ſhall find an imperfection in words, which I ſhall more at large explain, in their particular application to our ſeveral ſorts of ideas: for if we examine them, we ſhall find that the names of mixed modes are moſt liable to doubtfulneſs and imperfection, for the two firſt of theſe reaſons; and the names of ſubſtances chiefly for the two latter.

The names of mixed modes doubtful. Firſt, becauſe the ideas they ſtand for are ſo complex.

§. 6. Firſt the names of mixed modes are many of them liable to great uncertainty and obſcurity in their ſignification.

I. Becauſe of that great compoſition theſe complex ideas are often made up of. To make words ſerviceable to the end of communication, it is neceſſary (as has been ſaid) that they excite in the hearer exactly the ſame idea they ſtand for in the mind of the ſpeaker. Without this, men fill one another's heads with noiſe and ſounds; but convey not thereby their thoughts, and lay not before one another their ideas, which is the end of diſcourſe and language. But when a word ſtands for a very complex idea that is compounded and decompounded, it is not eaſy for men to form and retain that idea ſo exactly,

as

as to make the name in common use stand for the same precise idea, without any the least variation. Hence it comes to pass, that men's names of very compound ideas, such as for the most part are moral words, have seldom, in two different men, the same precise signification; since one man's complex idea seldom agrees with another's, and often differs from his own, from that which he had yesterday, or will have to-morrow.

Secondly, because they have no standards.

§. 7. II. Because the names of mixed modes, for the most part, want standards in nature, whereby men may rectify and adjust their significations; therefore they are very various and doubtful. They are assemblages of ideas put together at the pleasure of the mind, pursuing its own ends of discourse, and suited to its own notions; whereby it designs not to copy any thing really existing, but to denominate and rank things, as they come to agree with those archetypes or forms it has made. He that first brought the word sham, or wheedle, or banter, in use, put together, as he thought fit, those ideas he made it stand for: and as it is with any new names of modes, that are now brought into any language; so it was with the old ones, when they were first made use of. Names therefore that stand for collections of ideas which the mind makes at pleasure, must needs be of doubtful signification, when such collections are no where to be found constantly united in nature, nor any patterns to be shown whereby men may adjust them. What the word murder, or sacrilege, &c. signifies, can never be known from things themselves: there be many of the parts of those complex ideas, which are not visible in the action itself; the intention of the mind, or the relation of holy things, which make a part of murder or sacrilege, have no necessary connection with the outward and visible action of him that commits either: and the pulling the trigger of the gun, with which the murder is committed, and is all the action that perhaps is visible, has no natural connexion with those other ideas that make up the complex one, named murder. They have their union and combination only from the understanding, which unites them under one name: but uniting

uniting them without any rule or pattern, it cannot be but that the ſignification of the name that ſtands for ſuch voluntary collections ſhould be often various in the minds of different men, who have ſcarce any ſtanding rule to regulate themſelves and their notions by, in ſuch arbitrary ideas.

Propriety not a ſufficient remedy.

§. 8. It is true, common uſe, that is the rule of propriety, may be ſuppoſed here to afford ſome aid, to ſettle the ſignification of language; and it cannot be denied, but that in ſome meaſure it does. Common uſe regulates the meaning of words pretty well for common converſation; but no-body having an authority to eſtabliſh the preciſe ſignification of words, nor determined to what ideas any one ſhall annex them, common uſe is not ſufficient to adjuſt them to philoſophical diſcourſes; there being ſcarce any name of any very complex idea (to ſay nothing of others) which in common uſe has not a great latitude, and which keeping within the bounds of propriety, may not be made the ſign of far different ideas. Beſides, the rule and meaſure of propriety itſelf being no where eſtabliſhed, it is often matter of diſpute whether this or that way of uſing a word be propriety of ſpeech or no. From all which it is evident, that the names of ſuch kind of very complex ideas are naturally liable to this imperfection, to be of doubtful and uncertain ſignification; and even in men that have a mind to underſtand one another, do not always ſtand for the ſame idea in ſpeaker and hearer. Though the names glory and gratitude be the ſame in every man's mouth through a whole country, yet the complex collective idea, which every one thinks on, or intends by that name, is apparently very different in men uſing the ſame language.

The way of learning theſe names contributes alſo to their doubtfulneſs.

§. 9. The way alſo wherein the names of mixed modes are ordinarily learned, does not a little contribute to the doubtfulneſs of their ſignification. For if we will obſerve how children learn languages, we ſhall find that to make them underſtand what the names of ſimple ideas, or ſubſtances, ſtand for, people ordinarily ſhow them the thing, whereof they would have

have them have the idea; and then repeat to them the name that ſtands for it, as white, ſweet, milk, ſugar, cat, dog. But as for mixed modes, eſpecially the moſt material of them, moral words, the ſounds are uſually learned firſt; and then to know what complex ideas they ſtand for, they are either beholden to the explication of others, or (which happens for the moſt part) are left to their own obſervation and induſtry; which being little laid out in the ſearch of the true and preciſe meaning of names, theſe moral words are in moſt men's mouths little more than bare ſounds; or when they have any, it is for the moſt part but a very looſe and undetermined, and conſequently obſcure and confuſed ſignification. And even thoſe themſelves, who have with more attention ſettled their notions, do yet hardly avoid the inconvenience, to have them ſtand for complex ideas, different from thoſe which other, even intelligent and ſtudious men, make them the ſigns of. Where ſhall one find any, either controverſial debate, or familiar diſcourſe, concerning honour, faith, grace, religion, church, &c. wherein it is not eaſy to obſerve the different notions men have of them? which is nothing but this, that they are not agreed in the ſignification of thoſe words, nor have in their minds the ſame complex ideas which they make them ſtand for: and ſo all the conteſts that follow thereupon, are only about the meaning of a ſound. And hence we ſee, that in the interpretation of laws, whether divine or human, there is no end; comments beget comments, and explications make new matter for explications; and of limiting, diſtinguiſhing, varying the ſignification of theſe moral words, there is no end. Theſe ideas of men's making are, by men ſtill having the ſame power, multiplied in infinitum. Many a man who was pretty well ſatisfied of the meaning of a text of ſcripture, or clauſe in the code at firſt reading, has by conſulting commentators quite loſt the ſenſe of it, and by theſe elucidations given riſe or increaſe to his doubts, and drawn obſcurity upon the place. I ſay not this, that I think commentaries needleſs; but to ſhow how uncertain the names of mixed modes naturally are, even in the mouths of thoſe who had both the intention

and

and the faculty of ſpeaking as clearly as language was capable to expreſs their thoughts.

Hence unavoidable obſcurity in ancient authors.

§. 10. What obſcurity this has unavoidably brought upon the writings of men, who have lived in remote ages and different countries, it will be needleſs to take notice; ſince the numerous volumes of learned men, employing their thoughts that way, are proofs more than enough to ſhow what attention, ſtudy, ſagacity, and reaſoning are required, to find out the true meaning of ancient authors. But there being no writings we have any great concernment to be very ſolicitous about the meaning of, but thoſe that contain either truths we are required to believe, or laws we are to obey, and draw inconveniencies on us when we miſtake or tranſgreſs; we may be leſs anxious about the ſenſe of other authors; who writing but their own opinions, we are under no greater neceſſity to know them, than they to know ours. Our good or evil depending not on their decrees, we may ſafely be ignorant of their notions: and therefore, in the reading of them, if they do not uſe their words with a due clearneſs and perſpicuity, we may lay them aſide, and, without any injury done them, reſolve thus with ourſelves,

"Si non vis intelligi, debes negligi."

Names of ſubſtances of doubtful ſignification.

§. 11. If the ſignification of the names of mixed modes are uncertain, becauſe there be no real ſtandards exiſting in nature, to which thoſe ideas are referred, and by which they may be adjuſted; the names of ſubſtances are of a doubtful ſignification, for a contrary reaſon, viz. becauſe the ideas they ſtand for are ſuppoſed conformable to the reality of things, and are referred to ſtandards made by nature. In our ideas of ſubſtances we have not the liberty, as in mixed modes, to frame what combinations we think fit, to be the characteriſtical notes to rank and denominate things by. In theſe we muſt follow nature, ſuit our complex ideas to real exiſtences, and regulate the ſignification of their names by the things themſelves, if we will have our names to be ſigns of them, and ſtand for them. Here, it is true, we have patterns to follow; but

but patterns that will make the ſignification of their names very uncertain: for names muſt be of a very unſteady and various meaning, if the ideas they ſtand for be referred to ſtandards without us, that either cannot be known at all, or can be known but imperfectly and uncertainly.

§. 12. The names of ſubſtances have, as has been ſhown, a double reference in their ordinary uſe.

Names of ſubſtances referred, 1. To real eſſences that cannot be known.

Firſt, ſometimes they are made to ſtand for, and ſo their ſignification is ſuppoſed to agree to, the real conſtitution of things, from which all their properties flow, and in which they all centre. But this real conſtitution, or (as it is apt to be called) eſſence, being utterly unknown to us, any ſound that is put to ſtand for it, muſt be very uncertain in its application; and it will be impoſſible to know what things are, or ought to be called an horſe, or anatomy, when thoſe words are put for real eſſences, that we have no ideas of at all. And therefore, in this ſuppoſition, the names of ſubſtances being referred to ſtandards that cannot be known, their ſignifications can never be adjuſted and eſtabliſhed by thoſe ſtandards.

§. 13. Secondly, the ſimple ideas that are found to co-exiſt in ſubſtances being that which their names immediately ſignify, theſe, as united in the ſeveral ſorts of things, are the proper ſtandards to which their names are referred, and by which their ſignifications may be beſt rectified. But neither will theſe archetypes ſo well ſerve to this purpoſe, as to leave theſe names without very various and uncertain ſignifications. Becauſe theſe ſimple ideas that co-exiſt, and are united in the ſame ſubject, being very numerous, and having all an equal right to go into the complex ſpecifick idea, which the ſpecifick name is to ſtand for; men, though they propoſe to themſelves the very ſame ſubject to conſider, yet frame very different ideas about it; and ſo the name they uſe for it unavoidably comes to have, in ſeveral men, very different ſignifications. The ſimple qualities which make up the complex ideas being moſt

2. To co-exiſting qualities, which are known but imperfectly.

of

of them powers, in relation to changes, which they are apt to make in, or receive from other bodies, are almoſt infinite. He that ſhall but obſerve what a great variety of alterations any one of the baſer metals is apt to receive from the different application only of fire; and how much a greater number of changes any of them will receive in the hands of a chymiſt, by the application of other bodies; will not think it ſtrange that I count the properties of any ſort of bodies not eaſy to be collected, and completely known by the ways of inquiry, which our faculties are capable of. They being therefore at leaſt ſo many, that no man can know the preciſe and definite number, they are differently diſcovered by different men, according to their various ſkill, attention, and ways of handling; who therefore cannot chooſe but have different ideas of the ſame ſubſtance, and therefore make the ſignification of its common name very various and uncertain. For the complex ideas of ſubſtances being made up of ſuch ſimple ones as are ſuppoſed to co-exiſt in nature, every one has a right to put into his complex idea thoſe qualities he has found to be united together. For though in the ſubſtance of gold one ſatisfies himſelf with colour and weight, yet another thinks ſolubility in aq. regia as neceſſary to be joined with that colour in his idea of gold, as any one does its fuſibility; ſolubility in aq. regia being a quality as conſtantly joined with its colour and weight, as fuſibility, or any other; others put in its ductility or fixedneſs, &c. as they have been taught by tradition or experience. Who of all theſe has eſtabliſhed the right ſignification of the word gold? or who ſhall be the judge to determine? Each has its ſtandard in nature, which he appeals to, and with reaſon thinks he has the ſame right to put into his complex idea, ſignified by the word gold, thoſe qualities which upon trial he has found united; as another, who has not ſo well examined, has to leave them out; or a third, who has made other trials, has to put in others. For the union in nature of theſe qualities being the true ground of their union in one complex idea, who can ſay, one of them has more reaſon to be put in, or left out, than another? From hence it will

always

always unavoidably follow, that the complex ideas of ſubſtances, in men uſing the ſame name for them, will be very various; and ſo the ſignifications of thoſe names very uncertain.

3. To co-exiſting qualities which are known but imperfectly.

§. 14. Beſides, there is ſcarce any particular thing exiſting, which, in ſome of its ſimple ideas, does not communicate with a greater, and in others a leſs number of particular beings: who ſhall determine in this caſe which are thoſe that are to make up the preciſe collection that is to be ſignified by the ſpecifick name; or can with any juſt authority preſcribe, which obvious or common qualities are to be left out; or which more ſecret, or more particular, are to be put into the ſignification of the name of any ſubſtance? All which together ſeldom or never fail to produce that various and doubtful ſignification in the names of ſubſtances, which cauſes ſuch uncertainty, diſputes, or miſtakes, when we come to a philoſophical uſe of them.

With this imperfection they may ſerve for civil, but not well for philoſophical uſe.

§. 15. It is true, as to civil and common converſation, the general names of ſubſtances, regulated in their ordinary ſignification by ſome obvious qualities, (as by the ſhape and figure in things of known ſeminal propagation, and in other ſubſtances, for the moſt part by colour, joined with ſome other ſenſible qualities) do well enough to deſign the things men would be underſtood to ſpeak of: and ſo they uſually conceive well enough the ſubſtances meant by the word gold, or apple, to diſtinguiſh the one from the other. But in philoſophical inquiries and debates, where general truths are to be eſtabliſhed, and conſequences drawn from poſitions laid down; there the preciſe ſignification of the names of ſubſtances will be found, not only not to be well eſtabliſhed, but alſo very hard to be ſo. For example, he that ſhall make malleableneſs, or a certain degree of fixedneſs, a part of his complex idea of gold, may make propoſitions concerning gold, and draw conſequences from them, that will truly and clearly follow from gold, taken in ſuch a ſignification: but yet ſuch as another man can never be

forced to admit, nor be convinced of their truth, who makes not malleableneſs, or the ſame degree of fixedneſs, part of that complex idea, that the name gold, in his uſe of it, ſtands for.

Inſtance, liquor.

§. 16. This is a natural, and almoſt unavoidable imperfection in almoſt all the names of ſubſtances, in all languages whatſoever which men will eaſily find, when once paſſing from confuſed or looſe notions, they come to more ſtrict and cloſe inquiries. For then they will be convinced how doubtful and obſcure thoſe words are in their ſignification, which in ordinary uſe appeared very clear and determined. I was once in a meeting of very learned and ingenious phyſicians, where by chance there aroſe a queſtion, whether any liquor paſſed through the filaments of the nerves. The debate having been managed a good while, by variety of arguments on both ſides, I (who had been uſed to ſuſpect, that the greateſt part of diſputes were more about the ſignification of words than a real difference in the conception of things) deſired, that before they went any farther on in this diſpute, they would firſt examine, and eſtabliſh amongſt them, what the word liquor ſignified. They at firſt were a little ſurpriſed at the propoſal; and had they been perſons leſs ingenious, they might perhaps have taken it for a very frivolous or extravagant one: ſince there was no one there that thought not himſelf to underſtand very perfectly what the word liquor ſtood for; which I think too none of the moſt perplexed names of ſubſtances. However, they were pleaſed to comply with my motion, and upon examination found, that the ſignification of that word was not ſo ſettled and certain as they had all imagined; but that each of them made it a ſign of a different complex idea. This made them perceive that the main of their diſpute was about the ſignification of that term; and that they differed very little in their opinions, concerning ſome fluid and ſubtile matter, paſſing through the conduits of the nerves; though it was not ſo eaſy to agree whether it was to be called liquor or no, a thing which, when conſidered, they thought it not worth the contending about.

§. 17. How much this is the caſe, in the greateſt part of diſputes that men are engaged ſo hotly in, I ſhall perhaps have an occaſion in another place to take notice. Let us only here conſider a little more exactly the fore-mentioned inſtance of the word gold, and we ſhall ſee how hard it is preciſely to determine its ſignification. I think all agree to make it ſtand for a body of a certain yellow ſhining colour; which being the idea to which children have annexed that name, the ſhining yellow part of a peacock's tail is properly to them gold. Others finding fuſibility joined with that yellow colour in certain parcels of matter, make of that combination a complex idea, to which they give the name gold to denote a ſort of ſubſtances; and ſo exclude from being gold all ſuch yellow ſhining bodies, as by fire will be reduced to aſhes; and admit to be of that ſpecies, or to be comprehended under that name gold, only ſuch ſubſtances as having that ſhining yellow colour will by fire be reduced to fuſion, and not to aſhes. Another by the ſame reaſon adds the weight, which being a quality, as ſtraitly joined with that colour, as its fuſibility, he thinks has the ſame reaſon to be joined in its idea, and to be ſignified by its name: and therefore the other made up of body, of ſuch a colour and fuſibility, to be imperfect; and ſo on of all the reſt: wherein no one can ſhow a reaſon why ſome of the inſeparable qualities, that are always united in nature, ſhould be put into the nominal eſſence, and others left out: or why the word gold, ſignifying that ſort of body the ring on his finger is made of, ſhould determine that ſort rather by its colour, weight, and fuſibility, than by its colour, weight, and ſolubility in aq. regia: ſince the diſſolving it by that liquor is as inſeparable from it as the fuſion by fire; and they are both of them nothing but the relation which that ſubſtance has to two other bodies, which have a power to operate differently upon it. For by what right is it that fuſibility comes to be a part of the eſſence ſignified by the word gold, and ſolubility but a property of it? or why is its colour part of the eſſence, and its malleableneſs but a property? That which I mean is

Inſtance, gold.

this, That these being all but properties depending on its real constitution, and nothing but powers, either active or passive, in reference to other bodies: no one has authority to determine the signification of the word gold (as referred to such a body existing in nature) more to one collection of ideas to be found in that body than to another: whereby the signification of that name must unavoidably be very uncertain; since, as has been said, several people observe several properties in the same substance; and, I think, I may say no-body at all. And therefore we have but very imperfect descriptions of things, and words have very uncertain significations.

The names of simple ideas the least doubtful.

§. 18. From what has been said, it is easy to observe what has been before remarked, viz. That the names of simple ideas are, of all others, the least liable to mistakes, and that for these reasons. First, because the ideas they stand for, being each but one single perception, are much easier got, and more clearly retained, than the more complex ones, and therefore are not liable to the uncertainty which usually attends those compounded ones of substances and mixed modes, in which the precise number of simple ideas, that make them up, are not easily agreed, and so readily kept in the mind. And secondly, because they are never referred to any other essence, but barely that perception they immediately signify: which reference is that which renders the signification of the names of substances naturally so perplexed, and gives occasion to so many disputes. Men that do not perversely use their words, or on purpose set themselves to cavil, seldom mistake in any language, which they are acquainted with, the use and signification of the names of simple ideas: white and sweet, yellow and bitter, carry a very obvious meaning with them, which every one precisely comprehends, or easily perceives he is ignorant of, and seeks to be informed. But what precise collection of simple ideas modesty or frugality stand for in another's use, is not so certainly known. And however we are apt to think we well enough know what is meant by gold or iron; yet the precise complex idea, others make them the signs of,

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is not so certain: and I believe it is very seldom that, in speaker and hearer, they stand for exactly the same collection. Which must needs produce mistakes and disputes, when they are made use of in discourses, wherein men have to do with universal propositions, and would settle in their minds universal truths, and consider the consequences that follow from them.

And next to them, simple modes.

§. 19. By the same rule, the names of simple modes are, next to those of simple ideas, least liable to doubt and uncertainty, especially those of figure and number, of which men have so clear and distinct ideas. Who ever, that had a mind to understand them, mistook the ordinary meaning of seven, or a triangle? And in general the least compounded ideas in every kind have the least dubious names.

The most doubtful are the names of very compounded mixed modes and substances.

§. 20. Mixed modes therefore, that are made up but of a few and obvious simple ideas, have usually names of no very uncertain signification. But the names of mixed modes, which comprehend a great number of simple ideas, are commonly of a very doubtful and undetermined meaning, as has been shown. The names of substances, being annexed to ideas that are neither the real essences nor exact representations of the patterns they are referred to, are liable yet to greater imperfection and uncertainty, especially when we come to a philosophical use of them.

Why this imperfection charged upon words.

§. 21. The great disorder that happens in our names of substances, proceeding for the most part from our want of knowledge, and inability to penetrate into their real constitutions, it may probably be wondered, why I charge this as an imperfection rather upon our words than understandings. This exception has so much appearance of justice, that I think myself obliged to give a reason why I have followed this method. I must confess then, that when I first began this discourse of the understanding, and a good while after, I had not the least thought that any consideration of words was at all necessary to it. But when having passed over the original and composi-

tion of our ideas, I began to examine the extent and certainty of our knowledge, I found it had so near a connexion with words, that, unless their force and manner of signification were first well observed, there could be very little said clearly and pertinently concerning knowledge; which being conversant about truth, had constantly to do with propositions. And though it terminated in things, yet it was for the most part so much by the intervention of words, that they seemed scarce separable from our general knowledge. At least they interpose themselves so much between our understandings and the truth which it would contemplate and apprehend, that like the medium through which visible objects pass, their obscurity and disorder do not seldom cast a mist before our eyes, and impose upon our understandings. If we consider, in the fallacies men put upon themselves as well as others, and the mistakes in men's disputes and notions, how great a part is owing to words, and their uncertain or mistaken significations, we shall have reason to think this no small obstacle in the way to knowledge; which, I conclude, we are the more carefully to be warned of, because it has been so far from being taken notice of as an inconvenience, that the arts of improving it have been made the business of men's study; and obtained the reputation of learning and subtilty, as we shall see in the following chapter. But I am apt to imagine, that were the imperfections of language, as the instrument of knowledge, more thoroughly weighed, a great many of the controversies that make such a noise in the world, would of themselves cease; and the way to knowledge, and perhaps peace too, lie a great deal opener than it does.

This should teach us moderation, in imposing our own sense of old authors.

§. 22. Sure I am, that the signification of words in all languages depending very much on the thoughts, notions, and ideas of him that uses them, must unavoidably be of great uncertainty to men of the same language and country. This is so evident in the Greek authors, that he that shall peruse their writings will find in almost every one of them a distinct language, though the same words. But when to this natural difficulty

ficulty in every country there ſhall be added different countries and remote ages, wherein the ſpeakers and writers had very different notions, tempers, cuſtoms, ornaments and figures of ſpeech, &c. every one of which influenced the ſignification of their words then, though to us now they are loſt and unknown; it would become us to be charitable one to another in our interpretations or miſunderſtanding of thoſe antient writings: which though of great concernment to be underſtood, are liable to the unavoidable difficulties of ſpeech, which (if we except the names of ſimple ideas, and ſome very obvious things) is not capable, without a conſtant defining the terms, of conveying the ſenſe and intention of the ſpeaker, without any manner of doubt and uncertainty, to the hearer. And in diſcourſes of religion, law, and morality, as they are matters of the higheſt concernment, ſo there will be the greateſt difficulty.

§. 23. The volumes of interpreters and commentators on the old and new Teſtament are but too manifeſt proofs of this. Though every thing ſaid in the text be infallibly true, yet the reader may be, nay cannot chooſe but be very fallible in the underſtanding of it. Nor is it to be wondered, that the will of God, when cloathed in words, ſhould be liable to that doubt and uncertainty, which unavoidably attends that ſort of conveyance; when even his Son, whilſt cloathed in fleſh, was ſubject to all the frailties and inconveniencies of human nature, ſin excepted. And we ought to magnify his goodneſs, that he hath ſpread before all the world ſuch legible characters of his works and providence, and given all mankind ſo ſufficient a light of reaſon, that they to whom this written word never came, could not (whenever they ſet themſelves to ſearch) either doubt of the being of a God, or of the obedience due to him. Since then the precepts of natural religion are plain, and very intelligible to all mankind, and ſeldom come to be controverted; and other revealed truths, which are conveyed to us by books and languages, are liable to the common and natural obſcurities and difficulties incident to words; methinks it would become us to be more

careful and diligent in obſerving the former, and leſs magiſterial, poſitive, and imperious, in impoſing our own ſenſe and interpretations of the latter.

CHAP. X.

Of the Abuſe of Words.

Abuſe of words.

§. 1. BESIDES the imperfection that is naturally in language, and the obſcurity and confuſion that is ſo hard to be avoided in the uſe of words, there are ſeveral wilful faults and neglects which men are guilty of in this way of communication, whereby they render theſe ſigns leſs clear and diſtinct in their ſignification, than naturally they need to be.

Firſt, Words without any, or without clear ideas.

§. 2. Firſt, in this kind, the firſt and moſt palpable abuſe is, the uſing of words without clear and diſtinct ideas; or, which is worſe, ſigns without any thing ſignified. Of theſe there are two ſorts:

I. One may obſerve, in all languages, certain words, that if they be examined, will be found, in their firſt original and their appropriated uſe, not to ſtand for any clear and diſtinct ideas. Theſe, for the moſt part, the ſeveral ſects of philoſophy and religion have introduced. For their authors, or promoters, either affecting ſomething ſingular and out of the way of common apprehenſions, or to ſupport ſome ſtrange opinions, or cover ſome weakneſs of their hypotheſis, ſeldom fail to coin new words, and ſuch as, when they come to be examined, may juſtly be called inſignificant terms. For having either had no determinate collection of ideas annexed to them, when they were firſt invented; or at leaſt ſuch as, if well examined, will be found inconſiſtent; it is no wonder if afterwards, in the vulgar uſe of the ſame party, they remain empty ſounds, with little or no ſignification, amongſt thoſe who think it enough to have them

them often in their mouths, as the diſtinguiſhing characters of their church, or ſchool, without much troubling their heads to examine what are the preciſe ideas they ſtand for. I ſhall not need here to heap up inſtances; every man's reading and converſation will ſufficiently furniſh him: or if he wants to be better ſtored, the great mint-maſters of this kind of terms, I mean the ſchool-men and metaphyſicians (under which, I think, the diſputing natural and moral philoſophers of theſe latter ages may be comprehended) have wherewithal abundantly to content him.

§. 3. II. Others there be, who extend this abuſe yet farther, who take ſo little care to lay by words, which in their primary notation have ſcarce any clear and diſtinct ideas which they are annexed to, that by an unpardonable negligence they familiarly uſe words, which the propriety of language has affixed to very important ideas, without any diſtinct meaning at all. Wiſdom, glory, grace, &c. are words frequent enough in every man's mouth; but if a great many of thoſe who uſe them, ſhould be aſked what they mean by them, they would be at a ſtand, and not know what to anſwer: a plain proof, that though they have learned thoſe ſounds, and have them ready at their tongues end, yet there are no determined ideas laid up in their minds, which are to be expreſſed to others by them.

Occaſioned by learning names before the ideas they belong to.

§. 4. Men having been accuſtomed from their cradles to learn words, which are eaſily got and retained, before they knew, or had framed the complex ideas, to which they were annexed, or which were to be found in the things they were thought to ſtand for; they uſually continue to do ſo all their lives; and without taking the pains neceſſary to ſettle in their minds determined ideas, they uſe their words for ſuch unſteady and confuſed notions as they have, contenting themſelves with the ſame words other people uſe: as if their very ſound neceſſarily carried with it conſtantly the ſame meaning. This, though men make a ſhift with, in the ordinary occurrences of life, where they find it neceſſary to be underſtood, and therefore they make ſigns till they are

ſo; yet this inſignificancy in their words, when they come to reaſon concerning either their tenets or intereſt, manifeſtly fills their diſcourſe with abundance of empty unintelligible noiſe and jargon, eſpecially in moral matters, where the words for the moſt part ſtanding for arbitrary and numerous collections of ideas, not regularly and permanently united in nature, their bare ſounds are often only thought on, or at leaſt very obſcure and uncertain notions annexed to them. Men take the words they find in uſe amongſt their neighbours; and that they may not ſeem ignorant what they ſtand for, uſe them confidently, without much troubling their heads about a certain fixed meaning: whereby, beſides the eaſe of it, they obtain this advantage, that as in ſuch diſcourſes they ſeldom are in the right, ſo they are as ſeldom to be convinced that they are in the wrong; it being all one to go about to draw thoſe men out of their miſtakes, who have no ſettled notions, as to diſpoſſeſs a vagrant of his habitation, who has no ſettled abode. This I gueſs to be ſo; and every one may obſerve in himſelf and others, whether it be or no.

2. Unſteady application of them.

§. 5. Secondly, another great abuſe of words is inconſtancy in the uſe of them. It is hard to find a diſcourſe written of any ſubject, eſpecially of controverſy, wherein one ſhall not obſerve, if he read with attention, the ſame words (and thoſe commonly the moſt material in the diſcourſe, and upon which the argument turns) uſed ſometimes for one collection of ſimple ideas, and ſometimes for another; which is a perfect abuſe of language. Words being intended for ſigns of my ideas, to make them known to others, not by any natural ſignification, but by a voluntary impoſition, it is plain cheat and abuſe, when I make them ſtand ſometimes for one thing, and ſometimes for another; the wilful doing whereof, can be imputed to nothing but great folly, or greater diſhoneſty. And a man, in his accompts with another, may, with as much fairneſs, make the characters of numbers ſtand ſometimes for one, and ſometimes for another collection of units (v. g. this character 3 ſtand ſometimes for three, ſometimes for four, and ſometimes for eight)

eight) as in his diſcourſe, or reaſoning, make the ſame words ſtand for different collections of ſimple ideas. If men ſhould do ſo in their reckonings, I wonder who would have to do with them? One who would ſpeak thus, in the affairs and buſineſs of the world, and call 8 ſometimes ſeven, and ſometimes nine, as beſt ſerved his advantage, would preſently have clapped upon him one of the two names men are commonly diſguſted with. And yet in arguings and learned conteſts, the ſame ſort of proceedings paſſes commonly for wit and learning: but to me it appears a greater diſhoneſty, than the miſplacing of counters in the caſting up a debt; and the cheat the greater, by how much truth is of greater concernment and value than money.

3. Affected obſcurity by wrong application.

§. 6. Thirdly, another abuſe of language is an affected obſcurity, by either applying old words to new and unuſual ſignifications, or introducing new and ambiguous terms, without defining either; or elſe putting them ſo together, as may confound their ordinary meaning. Though the Peripatetic philoſophy has been moſt eminent in this way, yet other ſects have not been wholly clear of it. There are ſcarce any of them that are not cumbered with ſome difficulties (ſuch is the imperfection of human knowledge) which they have been fain to cover with obſcurity of terms, and to confound the ſignification of words, which, like a miſt before people's eyes, might hinder their weak parts from being diſcovered. That body and extenſion, in common uſe, ſtand for two diſtinct ideas, is plain to any one that will but reflect a little. For were their ſignification preciſely the ſame, it would be proper, and as intelligible to ſay, the body of an extenſion, as the extenſion of a body; and yet there are thoſe who find it neceſſary to confound their ſignification. To this abuſe, and the miſchiefs of confounding the ſignification of words, logick and the liberal ſciences, as they have been handled in the ſchools, have given reputation; and the admired art of diſputing hath added much to the natural imperfection of languages, whilſt it has been made uſe of and fitted to perplex the ſignification of words, more than to diſcover the

the knowledge and truth of things: and he that will look into that ſort of learned writings, will find the words there much more obſcure, uncertain, and undetermined in their meaning, than they are in ordinary converſation.

Logick and diſpute have much contributed to this.

§. 7. This is unavoidably to be ſo, where men's parts and learning are eſtimated by their ſkill in diſputing. And if reputation and reward ſhall attend theſe conqueſts, which depend moſtly on the fineneſs and niceties of words, it is no wonder if the wit of man, ſo employed, ſhould perplex, involve, and ſubtilize the ſignification of ſounds, ſo as never to want ſomething to ſay, in oppoſing or defending any queſtion; the victory being adjudged not to him who had truth on his ſide, but the laſt word in the diſpute.

Calling it ſubtilty.

§. 8. This, though a very uſeleſs ſkill, and that which I think the direct oppoſite to the ways of knowledge, hath yet paſſed hitherto under the laudable and eſteemed names of ſubtilty and acuteneſs: and has had the applauſe of the ſchools, and encouragement of one part of the learned men of the world. And no wonder, ſince the philoſophers of old (the diſputing and wrangling philoſophers I mean, ſuch as Lucian wittily and with reaſon taxes) and the ſchoolmen ſince, aiming at glory and eſteem for their great and univerſal knowledge, eaſier a great deal to be pretended to, than really acquired, found this a good expedient to cover their ignorance with a curious and inexplicable web of perplexed words, and procure to themſelves the admiration of others by unintelligible terms, the apter to produce wonder, becauſe they could not be underſtood: whilſt it appears in all hiſtory, that theſe profound doctors were no wiſer, nor more uſeful than their neighbours; and brought but ſmall advantage to human life, or the ſocieties wherein they lived: unleſs the coining of new words, where they produced no new things to apply them to, or the perplexing or obſcuring the ſignification of old ones, and ſo bringing all things into queſtion and diſpute, were a thing profitable

fitable to the life of man, or worthy commendation and reward.

This learning very little benefits ſociety.

§. 9. For notwithſtanding theſe learned diſputants, theſe all-knowing doctors, it was to the unſcholaſtic ſtateſman, that the governments of the world owed their peace, defence, and liberties; and from the illiterate and contemned mechanick (a name of diſgrace) that they received the improvements of uſeful arts. Nevertheleſs, this artificial ignorance, and learned gibberiſh, prevailed mightily in theſe laſt ages, by the intereſt and artifice of thoſe who found no eaſier way to that pitch of authority and dominion they have attained, than by amuſing the men of buſineſs and ignorant with hard words, or employing the ingenious and idle in intricate diſputes about unintelligible terms, and holding them perpetually entangled in that endleſs labyrinth. Beſides, there is no ſuch way to gain admittance, or give defence to ſtrange and abſurd doctrines, as to guard them round about with legions of obſcure, doubtful, and undefined words: which yet make theſe retreats more like the dens of robbers, or holes of foxes, than the fortreſſes of fair warriors; which if it be hard to get them out of, it is not for the ſtrength that is in them, but the briars and thorns, and the obſcurity of the thickets they are beſet with. For untruth being unacceptable to the mind of man, there is no other defence left for abſurdity, but obſcurity.

But deſtroys the inſtruments of knowledge and communication.

§. 10. Thus learned ignorance, and this art of keeping, even inquiſitive men, from true knowledge, hath been propagated in the world, and hath much perplexed, whilſt it pretended to inform the underſtanding. For we ſee that other well-meaning and wiſe men, whoſe education and parts had not acquired that acuteneſs, could intelligibly expreſs themſelves to one another; and in its plain uſe make a benefit of language. But though unlearned men well enough underſtood the words white and black, &c. and had conſtant notions of the ideas ſignified by thoſe words; yet there were philoſophers found, who had learning and ſubtilty enough

enough to prove, that ſnow was black; i. e. to prove, that white was black. Whereby they had the advantage to deſtroy the inſtruments and means of diſcourſe, converſation, inſtruction, and ſociety; whilſt with great art and ſubtilty they did no more but perplex and confound the ſignification of words, and thereby render language leſs uſeful, than the real defects of it had made it; a gift, which the illiterate had not attained to.

As uſeful as to confound the ſound of the letters.

§. 11. Theſe learned men did equally inſtruct men's underſtandings, and profit their lives, as he who ſhould alter the ſignification of known characters, and, by a ſubtle device of learning, far ſurpaſſing the capacity of the illiterate, dull and vulgar, ſhould, in his writing, ſhow that he could put A for B, and D for E, &c. to the no ſmall admiration and benefit of his reader: it being as ſenſeleſs to put black, which is a word agreed on to ſtand for one ſenſible idea, to put it, I ſay, for another, or the contrary idea, i. e. to call ſnow black, as to put this mark A, which is a character agreed on to ſtand for one modification of ſound, made by a certain motion of the organs of ſpeech, for B; which is agreed on to ſtand for another modification of ſound, made by another certain mode of the organs of ſpeech.

This art has perplexed religion and juſtice.

§. 12. Nor hath this miſchief ſtopped in logical niceties, or curious empty ſpeculations; it hath invaded the great concernments of human life and ſociety, obſcured and perplexed the material truths of law and divinity; brought confuſion, diſorder, and uncertainty into the affairs of mankind; and if not deſtroyed, yet in a great meaſure rendered uſeleſs, theſe two great rules, religion and juſtice. What have the greateſt part of the comments and diſputes upon the laws of God and man ſerved for, but to make the meaning more doubtful, and perplex the ſenſe? What have been the effect of thoſe multiplied curious diſtinctions and acute niceties, but obſcurity and uncertainty, leaving the words more unintelligible, and the reader more at a loſs? How elſe comes it to paſs that princes, ſpeaking or writing to their ſervants, in their ordinary commands, are eaſily under-

underſtood; ſpeaking to their people, in their laws, are not ſo? And, as I remarked before, doth it not often happen, that a man of an ordinary capacity very well underſtands a text or a law that he reads, till he conſults an expoſitor, or goes to counſel; who, by that time he hath done explaining them, makes the words ſignify either nothing at all, or what he pleaſes.

And ought not to paſs for learning.

§. 13. Whether any by-intereſts of theſe profeſſions have occaſioned this, I will not here examine; but I leave it to be conſidered, whether it would not be well for mankind, whoſe concernment it is to know things as they are, and to do what they ought, and not to ſpend their lives in talking about them, or toſſing words to and fro; whether it would not be well, I ſay, that the uſe of words were made plain and direct, and that language, which was given us for the improvement of knowledge and bond of ſociety, ſhould not be employed to darken truth, and unſettle people's rights; to raiſe miſts, and render unintelligible both morality and religion? Or that at leaſt, if this will happen, it ſhould not be thought learning or knowledge to do ſo?

4. Taking them for things.

§. 14. Fourthly, another great abuſe of words is, the taking them for things. This though it in ſome degree concerns all names in general, yet more particularly affects thoſe of ſubſtances. To this abuſe thoſe men are moſt ſubject, who moſt confine their thoughts to any one ſyſtem, and give themſelves up into a firm belief of the perfection of any received hypotheſis; whereby they come to be perſuaded, that the terms of that ſect are ſo ſuited to the nature of things, that they perfectly correſpond with their real exiſtence. Who is there, that has been bred up in the Peripatetic philoſophy, who does not think the ten names, under which are ranked the ten predicaments, to be exactly conformable to the nature of things? Who is there of that ſchool, that is not perſuaded, that ſubſtantial forms, vegetative ſouls, abhorrence of a vacuum, intentional ſpecies, &c. are ſomething real? Theſe words men have learned from their very entrance upon knowledge, and have found their maſters and ſyſtems lay

lay great ſtreſs upon them; and therefore they cannot quit the opinion, that they are conformable to nature, and are the repreſentations of ſomething that really exiſts. The Platoniſts have their ſoul of the world, and the Epicureans their endeavour towards motion in their atoms, when at reſt. There is ſcarce any ſect in philoſophy has not a diſtinct ſet of terms, that others underſtand not; but yet this gibberiſh, which, in the weakneſs of human underſtanding, ſerves ſo well to palliate men's ignorance, and cover their errors, comes, by familiar uſe amongſt thoſe of the ſame tribe, to ſeem the moſt important part of language, and of all other the terms the moſt ſignificant. And ſhould aerial and æthereal vehicles come once, by the prevalency of that doctrine, to be generally received any where, no doubt thoſe terms would make impreſſions on men's minds, ſo as to eſtabliſh them in the perſuaſion of the reality of ſuch things, as much as Peripatetic forms and intentional ſpecies have heretofore done.

Inſtance, in matter.

§. 15. How much names taken for things are apt to miſlead the underſtanding, the attentive reading of philoſophical writers would abundantly diſcover; and that, perhaps, in words little ſuſpected of any ſuch miſuſe. I ſhall inſtance in one only, and that a very familiar one: how many intricate diſputes have there been about matter, as if there were ſome ſuch thing really in nature, diſtinct from body; as it is evident the word matter ſtands for an idea diſtinct from the idea of body? For if the ideas theſe two terms ſtood for were preciſely the ſame, they might indifferently, in all places, be put for one another. But we ſee, that though it be proper to ſay, there is one matter of all bodies, one cannot ſay there is one body of all matters: we familiarly ſay, one body is bigger than another; but it ſounds harſh (and I think is never uſed) to ſay, one matter is bigger than another. Whence comes this then? viz. from hence, that though matter and body be not really diſtinct, but wherever there is the one there is the other; yet matter and body ſtand for two different conceptions, whereof the one is incomplete, and but a part of the other. For body

ſtands for a ſolid extended figured ſubſtance, whereof matter is but a partial and more confuſed conception, it ſeeming to me to be uſed for the ſubſtance and ſolidity of body, without taking in its extenſion and figure: and therefore it is that ſpeaking of matter, we ſpeak of it always as one, becauſe in truth it expreſsly contains nothing but the idea of a ſolid ſubſtance, which is every where the ſame, every where uniform. This being our idea of matter, we no more conceive or ſpeak of different matters in the world, than we do of different ſolidities; though we both conceive and ſpeak of different bodies, becauſe extenſion and figure are capable of variation. But ſince ſolidity cannot exiſt without extenſion and figure, the taking matter to be the name of ſomething really exiſting under that preciſion, has no doubt produced thoſe obſcure and unintelligible diſcourſes and diſputes, which have filled the heads and books of philoſophers concerning materia prima; which imperfection or abuſe, how far it may concern a great many other general terms, I leave to be conſidered. This, I think, I may at leaſt ſay, that we ſhould have a great many fewer diſputes in the world, if words were taken for what they are, the ſigns of our ideas only, and not for things themſelves. For when we argue about matter, or any the like term, we truly argue only about the idea we expreſs by that ſound, whether that preciſe idea agree to any thing really exiſting in nature or no. And if men would tell what ideas they make their words ſtand for, there could not be half that obſcurity or wrangling, in the ſearch or ſupport of truth, that there is.

This makes errors laſting.

§. 16. But whatever inconvenience follows from this miſtake of words, this I am ſure, that by conſtant and familiar uſe they charm men into notions far remote from the truth of things. It would be a hard matter to perſuade any one, that the words which his father or ſchoolmaſter, the parſon of the pariſh, or ſuch a reverend doctor uſed, ſignified nothing that really exiſted in nature; which, perhaps, is none of the leaſt cauſes, that men are ſo hardly drawn to quit their miſtakes, even in opinions purely

purely philoſophical, and where they have no other intereſt but truth. For the words they have a long time been uſed to, remaining firm in their minds, it is no wonder that the wrong notions annexed to them ſhould not be removed.

5. Setting them for what they cannot ſignify.

§. 17. Fifthly, another abuſe of words, is the ſetting them in the place of things which they do or can by no means ſignify. We may obſerve, that in the general names of ſubſtances, whereof the nominal eſſences are only known to us, when we put them into propoſitions, and affirm or deny any thing about them, we do moſt commonly tacitly ſuppoſe, or intend they ſhould ſtand for the real eſſence of a certain ſort of ſubſtances. For when a man ſays gold is malleable, he means and would inſinuate ſomething more than this, that what I call gold is malleable, (though truly it amounts to no more) but would have this underſtood, viz. that gold, i. e. what has the real eſſence of gold, is malleable; which amounts to thus much, that malleableneſs depends on, and is inſeparable from the real eſſence of gold. But a man, not knowing wherein that real eſſence conſiſts, the connection in his mind of malleableneſs, is not truly with an eſſence he knows not, but only with the ſound gold he puts for it. Thus when we ſay, that "animal rationale" is, and "animal implume bipes latis unguibus" is not a good definition of a man; it is plain, we ſuppoſe the name man in this caſe to ſtand for the real eſſence of a ſpecies, and would ſignify, that a rational animal better deſcribed that real eſſence than a two-legged animal with broad nails, and without feathers. For elſe, why might not Plato as properly make the word ἄνθρωπος, or man, ſtand for his complex idea, made up of the idea of a body, diſtinguiſhed from others by a certain ſhape and other outward appearances, as Ariſtotle make the complex idea, to which he gave the name ἄνθρωπος, or man, of body and the faculty of reaſoning joined together; unleſs the name ἄνθρωπος, or man, were ſuppoſed to ſtand for ſomething elſe than what it ſignifies; and to be put in the place of ſome other thing than the idea a man profeſſes he would expreſs by it?

§. 18.

§. 18. It is true, the names of ſubſtances would be much more uſeful, and propoſitions made in them much more certain, were the real eſſences of ſubſtances the ideas in our minds which thoſe words ſignified. And it is for want of thoſe real eſſences that our words convey ſo little knowledge or certainty in our diſcourſes about them: and therefore the mind, to remove that imperfection as much as it can, makes them, by a ſecret ſuppoſition, to ſtand for a thing, having that real eſſence, as if thereby it made ſome nearer approaches to it. For though the word man or gold ſignify nothing truly but a complex idea of properties united together in one ſort of ſubſtances: yet there is ſcarce any body in the uſe of theſe words, but often ſuppoſes each of thoſe names to ſtand for a thing having the real eſſence, on which theſe properties depend. Which is ſo far from diminiſhing the imperfection of our words, that by a plain abuſe it adds to it when we would make them ſtand for ſomething, which not being in our complex idea, the name we uſe can no ways be the ſign of.

v. g. Putting them for the real eſſences of ſubſtances.

§. 19. This ſhows us the reaſon why in mixed modes any of the ideas that make the compoſition of the complex one, being left out or changed, it is allowed to be another thing, i. e. to be of another ſpecies, it is plain in chance-medley, man-ſlaughter, murder, parricide, &c. The reaſon whereof is, becauſe the complex idea ſignified by that name is the real as well as nominal eſſence; and there is no ſecret reference of that name to any other eſſence but that. But in ſubſtances it is not ſo. For though in that called gold one puts into his complex idea what another leaves out, and vice verſa; yet men do not uſually think that therefore the ſpecies is changed: becauſe they ſecretly in their minds refer that name, and ſuppoſe it annexed to a real immutable eſſence of a thing exiſting, on which thoſe properties depend. He that adds to his complex idea of gold that of fixedneſs and ſolubility in aq. regia, which he put not in it before, is not thought to have changed the ſpecies; but only to have a more perfect

Hence we think every change of our idea in ſubſtances not to change the ſpecies.

idea, by adding another ſimple idea, which is always in fact joined with thoſe other, of which his former complex idea conſiſted. But this reference of the name to a thing, whereof we had not the idea, is ſo far from helping at all, that it only ſerves the more to involve us in difficulties. For by this tacit reference to the real eſſence of that ſpecies of bodies, the word gold (which by ſtanding for a more or leſs perfect collection of ſimple ideas, ſerves to deſign that ſort of body well enough in civil diſcourſe) comes to have no ſignification at all, being put for ſomewhat, whereof we have no idea at all, and ſo can ſignify nothing at all, when the body itſelf is away. For however it may be thought all one; yet, if well conſidered, it will be found a quite different thing to argue about gold in name, and about a parcel in the body itſelf, v. g. a piece of leaf-gold laid before us; though in diſcourſe we are fain to ſubſtitute the name for the thing.

The cauſe of the abuſe, a ſuppoſition of nature's working always regularly.

§. 20. That which I think very much diſpoſes men to ſubſtitute their names for the real eſſences of ſpecies, is the ſuppoſition before-mentioned, that nature works regularly in the production of things, and ſets the boundaries to each of thoſe ſpecies, by giving exactly the ſame real internal conſtitution to each individual, which we rank under one general name. Whereas any one who obſerves their different qualities, can hardly doubt, that many of the individuals, called by the ſame name, are, in their internal conſtitution, as different one from another as ſeveral of thoſe which are ranked under different ſpecifick names. This ſuppoſition, however, that the ſame preciſe and internal conſtitution goes always with the ſame ſpecifick name, makes men forward to take thoſe names for the repreſentatives of thoſe real eſſences, though indeed they ſignify nothing but the complex ideas they have in their minds when they uſe them. So that, if I may ſo ſay, ſignifying one thing, and being ſuppoſed for, or put in the place of another, they cannot but, in ſuch a kind of uſe, cauſe a great deal of uncertainty in men's diſcourſes; eſpecially in thoſe who have thoroughly

roughly imbibed the doctrine of ſubſtantial forms, whereby they firmly imagine the ſeveral ſpecies of things to be determined and diſtinguiſhed.

§. 21. But however prepoſterous and abſurd it be to make our names ſtand for ideas we have not, or (which is all one) eſſences that we know not, it being in effect to make our words the ſigns of nothing; yet it is evident to any one, who ever ſo little reflects on the uſe men make of their words, that there is nothing more familiar. When a man aſks whether this or that thing he ſees, let it be a drill, or a monſtrous fœtus, be a man or no; it is evident, the queſtion is not, whether that particular thing agree to his complex idea, expreſſed by the name man: but whether it has in it the real eſſence of a ſpecies of things, which he ſuppoſes his name man to ſtand for. In which way of uſing the names of ſubſtances, there are theſe falſe ſuppoſitions contained. This abuſe contains two falſe ſuppoſitions.

Firſt, that there are certain preciſe eſſences according to which nature makes all particular things, and by which they are diſtinguiſhed into ſpecies. That every thing has a real conſtitution, whereby it is what it is, and on which its ſenſible qualities depend, is paſt doubt: but I think it has been proved, that this makes not the diſtinction of ſpecies, as we rank them; nor the boundaries of their names.

Secondly, this tacitly alſo inſinuates, as if we had ideas of theſe propoſed eſſences. For to what purpoſe elſe is it to inquire whether this or that thing have the real eſſence of the ſpecies man, if we did not ſuppoſe that there were ſuch a ſpecifick eſſence known? which yet is utterly falſe: and therefore ſuch application of names, as would make them ſtand for ideas which we have not, muſt needs cauſe great diſorder in diſcourſes and reaſonings about them, and be a great inconvenience in our communication by words.

§. 22. Sixthly, there remains yet another more general, though perhaps leſs obſerved abuſe of words: and that is, that men having by a long and familiar uſe annexed to them certain ideas, they are apt to imagine 6. A ſuppoſition that words have a certain and evident ſignification.

ſo near and neceſſary a connexion between the names and the ſignification they uſe them in, that they forwardly ſuppoſe one cannot but underſtand what their meaning is; and therefore one ought to acquieſce in the words delivered, as if it were paſt doubt, that, in the uſe of thoſe common received ſounds, the ſpeaker and hearer had neceſſarily the ſame preciſe ideas. Whence preſuming, that when they have in diſcourſe uſed any term, they have thereby, as it were, ſet before others the very thing they talk of; and ſo likewiſe taking the words of others, as naturally ſtanding for juſt what they themſelves have been accuſtomed to apply them to, they never trouble themſelves to explain their own, or underſtand clearly others meaning. From whence commonly proceed noiſe and wrangling, without improvement or information; whilſt men take words to be the conſtant regular marks of agreed notions, which in truth are no more but the voluntary and unſteady ſigns of their own ideas. And yet men think it ſtrange, if in diſcourſe, or (where it is often abſolutely neceſſary) in diſpute, one ſometimes aſks the meaning of their terms: though the arguings one may every day obſerve in converſation, make it evident, that there are few names of complex ideas which any two men uſe for the ſame juſt preciſe collection. It is hard to name a word which will not be a clear inſtance of this. Life is a term, none more familiar. Any one almoſt would take it for an affront to be aſked what he meant by it. And yet if it comes in queſtion, whether a plant, that lies ready formed in the ſeed, have life; whether the embryo in an egg before incubation, or a man in a ſwoon without ſenſe or motion, be alive or no; it is eaſy to perceive that a clear diſtinct ſettled idea does not always accompany the uſe of ſo known a word as that of life is. Some groſs and confuſed conceptions men indeed ordinarily have, to which they apply the common words of their language; and ſuch a looſe uſe of their words ſerves them well enough in their ordinary diſcourſes or affairs. But this is not ſufficient for philoſophical inquiries. Knowledge and reaſoning require preciſe determinate ideas. And though men will not be ſo importunately dull, as

not to underſtand what others ſay without demanding an explication of their terms; nor ſo troubleſomely critical, as to correct others in the uſe of the words they receive from them; yet where truth and knowledge are concerned in the caſe, I know not what fault it can be to deſire the explication of words, whoſe ſenſe ſeems dubious; or why a man ſhould be aſhamed to own his ignorance, in what ſenſe another man uſes his words, ſince he has no other way of certainly knowing it, but by being informed. This abuſe of taking words upon truſt has no where ſpread ſo far, nor with ſo ill effects, as amongſt men of letters. The multiplication and obſtinacy of diſputes, which have ſo laid waſte the intellectual world, is owing to nothing more, than to this ill uſe of words. For though it be generally believed that there is great diverſity of opinions in the volumes and variety of controverſies the world is diſtracted with, yet the moſt I can find that the contending learned men of different parties do, in their arguings one with another, is, that they ſpeak different languages. For I am apt to imagine, that when any of them quitting terms, think upon things, and know what they think, they think all the ſame; though perhaps what they would have, be different.

§. 23. To conclude this conſideration of the imperfection and abuſe of language; the ends of language in our diſcourſe with others, being chiefly theſe three: firſt, to make known one man's thoughts or ideas to another; ſecondly, to do it with as much eaſe and quickneſs as poſſible; and, thirdly, thereby to convey the knowledge of things: language is either abuſed or deficient, when it fails of any of theſe three.

The ends of language: 1. To convey our ideas.

Firſt, words fail in the firſt of theſe ends, and lay not open one man's ideas to another's view: 1. When men have names in their mouths without any determinate ideas in their minds, whereof they are the ſigns; or, 2. When they apply the common received names of any language to ideas, to which the common uſe of that language does not apply them: or, 3. When they apply

them very unſteadily, making them ſtand now for one, and by and by for another idea.

2. To do it with quickneſs.

§. 24. Secondly, men fail of conveying their thoughts with all the quickneſs and eaſe that may be, when they have complex ideas without having any diſtinct names for them. This is ſometimes the fault of the language itſelf, which has not in it a ſound yet applied to ſuch a ſignification; and ſometimes the fault of the man, who has not yet learned the name for that idea he would ſhow another.

3. Therewith to convey the knowledge of things.

§. 25. Thirdly, there is no knowledge of things conveyed by men's words, when their ideas agree not to the reality of things. Though it be a defect, that has its original in our ideas, which are not ſo conformable to the nature of things, as attention, ſtudy, and application might make them; yet it fails not to extend itſelf to our words too, when we uſe them as ſigns of real beings, which yet never had any reality or exiſtence.

How men's words fail in all theſe.

§. 26. Firſt, he that hath words of any language, without diſtinct ideas in his mind to which he applies them, does, ſo far as he uſes them in diſcourſe, only make a noiſe without any ſenſe or ſignification; and how learned ſoever he may ſeem by the uſe of hard words or learned terms, is not much more advanced thereby in knowledge, than he would be in learning, who had nothing in his ſtudy but the bare titles of books, without poſſeſſing the contents of them. For all ſuch words, however put into diſcourſe, according to the right conſtruction of grammatical rules, or the harmony of well-turned periods, do yet amount to nothing but bare ſounds, and nothing elſe.

§. 27. Secondly, he that has complex ideas, without particular names for them, would be in no better caſe than a bookſeller, who had in his warehouſe volumes, that lay there unbound, and without titles; which he could therefore make known to others, only by ſhowing the looſe ſheets, and communicate them only by tale. This man is hindered in his diſcourſe, for want of words

to

to communicate his complex ideas, which he is therefore forced to make known by an enumeration of the ſimple ones that compoſe them; and ſo is fain often to uſe twenty words, to expreſs what another man ſignifies in one.

§. 28. Thirdly, he that puts not conſtantly the ſame ſign for the ſame idea, but uſes the ſame words ſometimes in one, and ſometimes in another ſignification, ought to paſs in the ſchools and converſation for as fair a man, as he does in the market and exchange, who ſells ſeveral things under the ſame name.

§. 29. Fourthly, he that applies the words of any language to ideas different from thoſe to which the common uſe of that country applies them, however his own underſtanding may be filled with truth and light, will not by ſuch words be able to convey much of it to others, without defining his terms. For however the ſounds are ſuch as are familiarly known, and eaſily enter the ears of thoſe who are accuſtomed to them; yet ſtanding for other ideas than thoſe they uſually are annexed to, and are wont to excite in the mind of the hearers, they cannot make known the thoughts of him who thus uſes them.

§. 30. Fifthly, he that imagined to himſelf ſubſtances ſuch as never have been, and filled his head with ideas which have not any correſpondence with the real nature of things, to which yet he gives ſettled and defined names; may fill his diſcourſe, and perhaps another man's head, with the fantaſtical imaginations of his own brain, but will be very far from advancing thereby one jot in real and true knowledge.

§. 31. He that hath names without ideas, wants meaning in his words, and ſpeaks only empty ſounds. He that hath complex ideas without names for them, wants liberty and diſpatch in his expreſſions, and is neceſſitated to uſe periphraſes. He that uſes his words looſely and unſteadily, will either be not minded, or not underſtood. He that applies his names to ideas different from their common uſe, wants propriety in his language, and ſpeaks gibberiſh. And he that hath the ideas of ſubſtances diſagreeing with the real exiſtence of things,

ſo far wants the materials of true knowledge in his underſtanding, and hath inſtead thereof chimeras.

How in ſubſtances.

§. 32. In our notions concerning ſubſtances, we are liable to all the former inconveniencies: v. g. he that uſes the word tarantula, without having any imagination or idea of what it ſtands for, pronounces a good word; but ſo long means nothing at all by it. 2. He that in a new-diſcovered country ſhall ſee ſeveral ſorts of animals and vegetables, unknown to him before, may have as true ideas of them, as of a horſe or a ſtag; but can ſpeak of them only by a deſcription, till he ſhall either take the names the natives call them by, or give them names himſelf. 3. He that uſes the word body ſometimes for pure extenſion, and ſometimes for extenſion and ſolidity together, will talk very fallaciouſly. 4. He that gives the name horſe to that idea, which common uſage calls mule, talks improperly, and will not be underſtood. 5. He that thinks the name centaur ſtands for ſome real being, impoſes on himſelf, and miſtakes words for things.

How in modes and relations.

§. 33. In modes and relations generally we are liable only to the four firſt of theſe inconveniencies; viz. 1. I may have in my memory the names of modes, as gratitude or charity, and yet not have any preciſe ideas annexed in my thoughts to thoſe names. 2. I may have ideas, and not know the names that belong to them; v. g. I may have the idea of a man's drinking till his colour and humour be altered, till his tongue trips, and his eyes look red, and his feet fail him; and yet not know, that it is to be called drunkenneſs. 3. I may have the ideas of virtues or vices, and names alſo, but apply them amiſs: v. g. when I apply the name frugality to that idea which others call and ſignify by this ſound, covetouſneſs. 4. I may uſe any of thoſe names with inconſtancy. 5. But, in modes and relations, I cannot have ideas diſagreeing to the exiſtence of things: for modes being complex ideas, made by the mind at pleaſure; and relation being but by way of conſidering or comparing two things together, and ſo alſo an idea of my own

own making; theſe ideas can ſcarce be found to diſagree with any thing exiſting, ſince they are not in the mind as the copies of things regularly made by nature, nor as properties inſeparably flowing from the internal conſtitution or eſſence of any ſubſtance; but as it were patterns lodged in my memory, with names annexed to them, to denominate actions and relations by, as they come to exiſt. But the miſtake is commonly in my giving a wrong name to my conceptions; and ſo uſing words in a different ſenſe from other people, I am not underſtood, but am thought to have wrong ideas of them, when I give wrong names to them. Only if I put in my ideas of mixed modes or relations any inconſiſtent ideas together, I fill my head alſo with chimeras; ſince ſuch ideas, if well examined, cannot ſo much as exiſt in the mind, much leſs any real being ever be denominated from them.

7. Figurative ſpeech alſo an abuſe of language.

§. 34. Since wit and fancy find eaſier entertainment in the world, than dry truth and real knowledge, figurative ſpeeches and alluſion in language will hardly be admitted as an imperfection or abuſe of it. I confeſs, in diſcourſes where we ſeek rather pleaſure and delight than information and improvement, ſuch ornaments as are borrowed from them can ſcarce paſs for faults. But yet if we would ſpeak of things as they are, we muſt allow that all the art of rhetorick, beſides order and clearneſs, all the artificial and figurative application of words eloquence hath invented, are for nothing elſe but to inſinuate wrong ideas, move the paſſions, and thereby miſlead the judgment, and ſo indeed are perfect cheats: and therefore however laudable or allowable oratory may render them in harangues and popular addreſſes, they are certainly, in all diſcourſes that pretend to inform or inſtruct, wholly to be avoided; and where truth and knowledge are concerned, cannot but be thought a great fault, either of the language or perſon that makes uſe of them. What, and how various they are, will be ſuperfluous here to take notice; the books of rhetorick which abound in the world, will inſtruct thoſe who want to be informed: only I cannot but obſerve how little the preſervation

ſervation and improvement of truth and knowledge is the care and concern of mankind; ſince the arts of fallacy are endowed and preferred. It is evident how much men love to deceive and be deceived, ſince rhetorick, that powerful inſtrument of error and deceit, has its eſtabliſhed profeſſors, is publickly taught, and has always been had in great reputation: and, I doubt not, but it will be thought great boldneſs, if not brutality in me, to have ſaid thus much againſt it. Eloquence, like the fair ſex, has too prevailing beauties in it, to ſuffer itſelf ever to be ſpoken againſt. And it is in vain to find fault with thoſe arts of deceiving, wherein men find pleaſure to be deceived.

CHAP. XI.

Of the Remedies of the foregoing Imperfections and Abuſes.

They are worth ſeeking.

§. 1. THE natural and improved imperfections of languages we have ſeen above at large; and ſpeech being the great bond that holds ſociety together, and the common conduit whereby the improvements of knowledge are conveyed from one man, and one generation to another; it would well deſerve our moſt ſerious thoughts to conſider what remedies are to be found for the inconveniencies above-mentioned.

Are not eaſy.

§. 2. I am not ſo vain to think, that any one can pretend to attempt the perfect reforming the languages of the world, no not ſo much as of his own country, without rendering himſelf ridiculous. To require that men ſhould uſe their words conſtantly in the ſame ſenſe, and for none but determined and uniform ideas, would be to think that all men ſhould have the ſame notions, and ſhould talk of nothing but what they have clear and diſtinct ideas of; which is not to be expected by any one, who hath not vanity enough to imagine he can prevail with men to be very knowing or very ſilent. And he muſt be very little ſkilled in the world,

world, who thinks that a voluble tongue ſhall accompany only a good underſtanding; or that men's talking much or little ſhould hold proportion only to their knowledge.

But yet neceſſary to philoſophy.

§. 3. But though the market and exchange muſt be left to their own ways of talking, and goſſipings not be robbed of their ancient privilege; though the ſchools and men of argument would perhaps take it amiſs to have any thing offered to abate the length, or leſſen the number, of their diſputes: yet methinks thoſe who pretend ſeriouſly to ſearch after or maintain truth, ſhould think themſelves obliged to ſtudy how they might deliver themſelves without obſcurity, doubtfulneſs, or equivocation, to which men's words are naturally liable, if care be not taken.

Miſuſe of words the great cauſe of errors.

§. 4. For he that ſhall well conſider the errors and obſcurity, the miſtakes and confuſion, that are ſpread in the world by an ill uſe of words, will find ſome reaſon to doubt whether language, as it has been employed, has contributed more to the improvement or hindrance of knowledge amongſt mankind. How many are there that, when they would think on things, fix their thoughts only on words, eſpecially when they would apply their minds to moral matters? And who then can wonder, if the reſult of ſuch contemplations and reaſonings, about little more than ſounds, whilſt the ideas they annexed to them are very confuſed and very unſteady, or perhaps none at all; who can wonder, I ſay, that ſuch thoughts and reaſonings end in nothing but obſcurity and miſtake, without any clear judgment or knowledge?

Obſtinacy,

§. 5. This inconvenience, in an ill uſe of words, men ſuffer in their own private meditations: but much more manifeſt are the diſorders which follow from it, in converſation, diſcourſe, and arguings with others. For language being the great conduit, whereby men convey their diſcoveries, reaſonings, and knowledge, from one to another; he that makes an ill uſe of it, though he does not corrupt the fountains of knowledge, which are in things themſelves;

yet

yet he does, as much as in him lies, break or ſtop the pipes, whereby it is diſtributed to the public uſe and advantage of mankind. He that uſes words without any clear and ſteady meaning, what does he but lead himſelf and others into errors? And he that deſignedly does it, ought to be looked on as an enemy to truth and knowledge. And yet who can wonder, that all the ſciences and parts of knowledge have been ſo overcharged with obſcure and equivocal terms, and inſignificant and doubtful expreſſions, capable to make the moſt attentive or quick-ſighted very little or not at all the more knowing or orthodox; ſince ſubtilty, in thoſe who make profeſſion to teach or defend truth, hath paſſed ſo much for a virtue: a virtue, indeed, which conſiſting for the moſt part in nothing but the fallacious and illuſory uſe of obſcure or deceitful terms, is only fit to make men more conceited in their ignorance, and more obſtinate in their errors.

And wrangling.

§. 6. Let us look into the books of controverſy of any kind; there we ſhall ſee, that the effect of obſcure, unſteady or equivocal terms, is nothing but noiſe and wrangling about ſounds, without convincing or bettering a man's underſtanding. For if the idea be not agreed on betwixt the ſpeaker and hearer, for which the words ſtand, the argument is not about things, but names. As often as ſuch a word, whoſe ſignification is not aſcertained betwixt them, comes in uſe, their underſtandings have no other object wherein they agree, but barely the ſound; the things that they think on at that time, as expreſſed by that word, being quite different.

Inſtance, bat and bird.

§. 7. Whether a bat be a bird or no, is not a queſtion; whether a bat be another thing than indeed it is, or have other qualities than indeed it has, for that would be extremely abſurd to doubt of: but the queſtion is, 1. Either between thoſe that acknowledged themſelves to have but imperfect ideas of one or both of this ſort of things, for which theſe names are ſuppoſed to ſtand; and then it is a real inquiry concerning the name of a bird or a bat, to make their yet imperfect ideas of it more complete, by examining

mining whether all the ſimple ideas, to which, combined together, they both give the name bird, be all to be found in a bat: but this is a queſtion only of inquirers (not diſputers) who neither affirm, nor deny, but examine. Or, 2. It is a queſtion between diſputants, whereof the one affirms, and the other denies, that a bat is a bird. And then the queſtion is barely about the ſignification of one or both theſe words; in that they not having both the ſame complex ideas, to which they give theſe two names, one holds, and the other denies, that theſe two names may be affirmed one of another. Were they agreed in the ſignification of theſe two names, it were impoſſible they ſhould diſpute about them: for they would preſently and clearly ſee (were that adjuſted between them) whether all the ſimple ideas, of the more general name bird, were found in the complex idea of a bat, or no; and ſo there could be no doubt, whether a bat were a bird or no. And here I deſire it may be conſidered, and carefully examined, whether the greateſt part of the diſputes in the world are not merely verbal, and about the ſignification of words; and whether if the terms they are made in were defined, and reduced in their ſignification (as they muſt be where they ſignify any thing) to determined collections of the ſimple ideas they do or ſhould ſtand for, thoſe diſputes would not end of themſelves, and immediately vaniſh. I leave it then to be conſidered, what the learning of diſputation is, and how well they are employed for the advantage of themſelves or others, whoſe buſineſs is only the vain oſtentation of ſounds; i. e. thoſe who ſpend their lives in diſputes and controverſies. When I ſhall ſee any of thoſe combatants ſtrip all his terms of ambiguity and obſcurity (which every one may do in the words he uſes himſelf) I ſhall think him a champion for knowledge, truth and peace, and not the ſlave of vain-glory, ambition, or a party.

§. 8. To remedy the defects of ſpeech before-mentioned to ſome degree, and to prevent the inconveniencies that follow from them, I imagine the obſervation of theſe following rules may be of uſe, till ſomebody better able ſhall judge it worth his while to think more maturely

maturely on this matter, and oblige the world with his thoughts on it.

1. Remedy, to use no word without an idea.

First, a man shall take care to use no word without a signification, no name without an idea for which he makes it stand. This rule will not seem altogether needless, to any one who shall take the pains to recollect how often he has met with such words, as instinct, sympathy and antipathy, &c. in the discourse of others, so made use of, as he might easily conclude, that those that used them had no ideas in their minds to which they applied them; but spoke them only as sounds, which usually served instead of reasons on the like occasions. Not but that these words, and the like, have very proper significations in which they may be used; but there being no natural connexion between any words and any ideas, these, and any other, may be learned by rote, and pronounced or writ by men, who have no ideas in their minds, to which they have annexed them, and for which they make them stand; which is necessary they should, if men would speak intelligibly even to themselves alone.

2. To have distinct ideas annexed to them in modes.

§. 9. Secondly, it is not enough a man uses his words as signs of some ideas: those he annexes them to, if they be simple, must be clear and distinct; if complex, must be determinate, i. e. the precise collection of simple ideas settled in the mind, with that sound annexed to it, as the sign of that precise determined collection, and no other. This is very necessary in names of modes, and especially moral words; which having no settled objects in nature, from whence their ideas are taken, as from their original, are apt to be very confused. Justice is a word in every man's mouth, but most commonly with a very undetermined loose signification: which will always be so, unless a man has in his mind a distinct comprehension of the component parts, that complex idea consists of: and if it be decompounded, must be able to resolve it still on, till he at last comes to the simple ideas that make it up: and unless this be done, a man makes an ill use of the word, let it be justice, for example, or any other. I do not say, a man need

need ſtand to recollect and make this analyſis at large, every time the word juſtice comes in his way: but this at leaſt is neceſſary, that he have ſo examined the ſignification of that name, and ſettled the idea of all its parts in his mind, that he can do it when he pleaſes. If one, who makes his complex idea of juſtice to be ſuch a treatment of the perſon or goods of another, as is according to law, hath not a clear and diſtinct idea what law is, which makes a part of his complex idea of juſtice; it is plain his idea of juſtice itſelf will be confuſed and imperfect. This exactneſs will, perhaps, be judged very troubleſome; and therefore moſt men will think they may be excuſed from ſettling the complex ideas of mixed modes ſo preciſely in their minds. But yet I muſt ſay, till this be done, it muſt not be wondered that they have a great deal of obſcurity and confuſion in their own minds, and a great deal of wrangling in their diſcourſe with others.

And diſtinct and conformable in ſubſtances.

§. 10. In the names of ſubſtances, for a right uſe of them, ſomething more is required than barely determined ideas. In theſe the names muſt alſo be conformable to things as they exiſt: but of this I ſhall have occaſion to ſpeak more at large by and by. This exactneſs is abſolutely neceſſary in inquiries after philoſophical knowledge, and in controverſies about truth. And though it would be well too, if it extended itſelf to common converſation, and the ordinary affairs of life? yet I think that is ſcarce to be expected. Vulgar notions ſuit vulgar diſcourſes; and both, though confuſed enough, yet ſerve pretty well the market and the wake. Merchants and lovers, cooks and taylors, have words wherewithal to diſpatch their ordinary affairs; and ſo, I think, might philoſophers and diſputants too, if they had a mind to underſtand, and to be clearly underſtood.

3. Propriety.

§. 11. Thirdly, it is not enough that men have ideas, determined ideas, for which they make theſe ſigns ſtand; but they muſt alſo take care to apply their words, as near as may be, to ſuch ideas as common uſe has annexed them to. For words, eſpecially of languages already framed, being no man's pri-

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vate poſſeſſion, but the common meaſure of commerce and communication, it is not for any one, at pleaſure, to change the ſtamp they are current in, nor alter the ideas they are affixed to; or at leaſt, when there is a neceſſity to do ſo, he is bound to give notice of it. Men's intentions in ſpeaking are, or at leaſt ſhould be, to be underſtood; which cannot be without frequent explanations, demands, and other the like incommodious interruptions, where men do not follow common uſe. Propriety of ſpeech is that which gives our thoughts entrance into other men's minds with the greateſt eaſe and advantage; and therefore deſerves ſome part of our care and ſtudy, eſpecially in the names of moral words. The proper ſignification and uſe of terms is beſt to be learned from thoſe, who in their writings and diſcourſes appear to have had the cleareſt notions, and applied to them their terms with the exacteſt choice and fitneſs. This way of uſing a man's words, according to the propriety of the language, though it have not always the good fortune to be underſtood; yet moſt commonly leaves the blame of it on him, who is ſo unſkilful in the language he ſpeaks, as not to underſtand it, when made uſe of as it ought to be.

4. To make known their meaning.

§. 12. Fourthly, but becauſe common uſe has not ſo viſibly annexed any ſignification to words, as to make men know always certainly what they preciſely ſtand for; and becauſe men, in the improvement of their knowledge, come to have ideas different from the vulgar and ordinary received ones, for which they muſt either make new words (which men ſeldom venture to do, for fear of being thought guilty of affectation or novelty) or elſe muſt uſe old ones, in a new ſignification: therefore after the obſervation of the foregoing rules, it is ſometimes neceſſary, for the aſcertaining the ſignification of words, to declare their meaning; where either common uſe has left it uncertain and looſe (as it has in moſt names of very complex ideas) or where the term, being very material in the diſcourſe, and that upon which it chiefly turns, is liable to any doubtfulneſs or miſtake.

§. 13.

§. 13. As the ideas, men's words ſtand for, are of different ſorts; ſo the way of making known the ideas, they ſtand for, when there is occaſion, is alſo different. For though defining be thought the proper way to make known the proper ſignification of words; yet there are ſome words that will not be defined, as there are others, whoſe preciſe meaning cannot be made known, but by definition; and perhaps a third, which partake ſomewhat of both the other, as we ſhall ſee in the names of ſimple ideas, modes, and ſubſtances.

And that three ways.

§. 14. Firſt, when a man makes uſe of the name of any ſimple idea, which he perceives is not underſtood, or is in danger to be miſtaken, he is obliged by the laws of ingenuity, and the end of ſpeech, to declare his meaning, and make known what idea he makes it ſtand for. This, as has been ſhown, cannot be done by definition; and therefore, when a ſynonymous word fails to do it, there is but one of theſe ways left. Firſt, ſometimes the naming the ſubject, wherein that ſimple idea is to be found, will make its name to be underſtood by thoſe who are acquainted with that ſubject, and know it by that name. So to make a countryman underſtand what "feuillemorte" colour ſignifies, it may ſuffice to tell him, it is the colour of withered leaves falling in autumn. Secondly, but the only ſure way of making known the ſignification of the name of any ſimple idea is by preſenting to his ſenſes that ſubject, which may produce it in his mind, and make him actually have the idea that word ſtands for.

1. In ſimple ideas, by ſynonymous terms, or ſhowing.

§. 15. Secondly, mixed modes, eſpecially thoſe belonging to morality, being moſt of them ſuch combinations of ideas, as the mind puts together of its own choice, and whereof there are not always ſtanding patterns to be found exiſting; the ſignification of their names cannot be made known, as thoſe of ſimple ideas, by any ſhowing; but, in recompence thereof, may be perfectly and exactly defined. For they being combinations of ſeveral ideas, that the mind of man has arbitrarily put together, without reference

2. In mixed modes, by definition.

ference to any archetypes, men may, if they pleaſe, exactly know the ideas that go to each compoſition, and ſo both uſe theſe words in a certain and undoubted ſignification, and perfectly declare, when there is occaſion, what they ſtand for. This, if well conſidered, would lay great blame on thoſe, who make not their diſcourſes about moral things very clear and diſtinct. For ſince the preciſe ſignification of the names of mixed modes, or, which is all one, the real eſſence of each ſpecies is to be known, they being not of nature's but man's making, it is a great negligence and perverſeneſs to diſcourſe of moral things with uncertainty and obſcurity; which is more pardonable in treating of natural ſubſtances, where doubtful terms are hardly to be avoided, for a quite contrary reaſon, as we ſhall ſee by and by.

Morality capable of demonſtration.

§. 16. Upon this ground it is, that I am bold to think, that morality is capable of demonſtration, as well as mathematicks: ſince the preciſe real eſſence of the things moral words ſtand for may be perfectly known; and ſo the congruity and incongruity of the things themſelves be certainly diſcovered; in which conſiſts perfect knowledge. Nor let any one object, that the names of ſubſtances are often to be made uſe of in morality, as well as thoſe of modes, from which will ariſe obſcurity. For as to ſubſtances, when concerned in moral diſcourſes, their divers natures are not ſo much inquired into, as ſuppoſed; v. g. when we ſay that man is ſubject to law, we mean nothing by man, but a corporeal rational creature: what the real eſſence or other qualities of that creature are, in this caſe, is no way conſidered. And therefore, whether a child or changeling be a man in a phyſical ſenſe, may amongſt the naturaliſts be as diſputable as it will, it concerns not at all the moral man, as I may call him, which is this immoveable unchangeable idea, a corporeal rational being. For were there a monkey, or any other creature to be found, that has the uſe of reaſon to ſuch a degree as to be able to underſtand general ſigns, and to deduce conſequences about general ideas, he would no doubt be ſubject to law, and in that ſenſe be a man, how much ſoever he differed in ſhape from

from others of that name. The names of ſubſtances, if they be uſed in them as they ſhould, can no more diſturb moral than they do mathematical diſcourſes: where, if the mathematician ſpeaks of a cube or globe of gold, or any other body, he has his clear ſettled idea which varies not, though it may by miſtake be applied to a particular body to which it belongs not.

Definitions can make moral diſcourſes clear.

§. 17. This I have here mentioned by the by, to ſhow of what conſequence it is for men, in their names of mixed modes, and conſequently in all their moral diſcourſes, to define their words when there is occaſion: ſince thereby moral knowledge may be brought to ſo great clearneſs and certainty. And it muſt be great want of ingenuity (to ſay no worſe of it) to refuſe to do it: ſince a definition is the only way whereby the preciſe meaning of moral words can be known; and yet a way whereby their meaning may be known certainly, and without leaving any room for any conteſt about it. And therefore the negligence or perverſeneſs of mankind cannot be excuſed, if their diſcourſes in morality be not much more clear than thoſe in natural philoſophy: ſince they are about ideas in the mind, which are none of them falſe or diſproportionate: they having no external beings for the archetypes which they are referred to, and muſt correſpond with. It is far eaſier for men to frame in their minds an idea which ſhall be the ſtandard to which they will give the name juſtice, with which pattern ſo made, all actions that agree ſhall paſs under that denomination; than, having ſeen Ariſtides, to frame an idea that ſhall in all things be exactly like him; who is as he is, let men make what idea they pleaſe of him. For the one, they need but know the combination of ideas that are put together in their own minds; for the other, they muſt inquire into the whole nature, and abſtruſe hidden conſtitution, and various qualities of a thing exiſting without them.

And is the only way.

§. 18. Another reaſon that makes the defining of mixed modes ſo neceſſary, eſpecially of moral words, is what I mentioned a little before, viz. that it is the only way whereby the

ſignification of the moſt of them can be known with certainty. For the ideas they ſtand for, being for the moſt part ſuch whoſe component parts no where exiſt together, but ſcattered and mingled with others, it is the mind alone that collects them, and gives them the union of one idea: and it is only by words, enumerating the ſeveral ſimple ideas which the mind has united, that we can make known to others what their names ſtand for; the aſſiſtance of the ſenſes in this caſe not helping us, by the propoſal of ſenſible objects, to ſhow the ideas which our names of this kind ſtand for, as it does often in the names of ſenſible ſimple ideas, and alſo to ſome degree in thoſe of ſubſtances.

3. In ſubſtances, by ſhowing and defining.

§. 19. Thirdly, for the explaining the ſignification of the names of ſubſtances, as they ſtand for the ideas we have of their diſtinct ſpecies, both the fore-mentioned ways, viz. of ſhowing and defining, are requiſite in many caſes to be made uſe of. For there being ordinarily in each ſort ſome leading qualities, to which we ſuppoſe the other ideas, which make up our complex idea of that ſpecies, annexed; we forwardly give the ſpecifick name to that thing, wherein that characteriſtical mark is found, which we take to be the moſt diſtinguiſhing idea of that ſpecies. Theſe leading or characteriſtical (as I may call them) ideas, in the ſorts of animals and vegetables, are (as has been before remarked, ch. vi. §. 29. and ch. ix. §. 15.) moſtly figure, and in inanimate bodies, colour, and in ſome both together. Now,

Ideas of the leading qualities of ſubſtances are beſt got by ſhowing.

§. 20. Theſe leading ſenſible qualities are thoſe which make the chief ingredients of our ſpecifick ideas, and conſequently the moſt obſervable and invariable part in the definitions of our ſpecifick names, as attributed to ſorts of ſubſtances coming under our knowledge. For though the ſound man, in its own nature, be as apt to ſignify a complex idea made up of animality and rationality, united in the ſame ſubject, as to ſignify any other combination; yet uſed as a mark to ſtand for a ſort of creatures we count of our own kind, perhaps, the outward ſhape is as neceſſary to be taken into

into our complex idea, ſignified by the word man, as any other we find in it: and therefore why Plato's "animal implume bipes latis unguibus" ſhould not be a good definition of the name man, ſtanding for that ſort of creatures, will not be eaſy to ſhow: for it is the ſhape, as the leading quality, that ſeems more to determine that ſpecies, than a faculty of reaſoning, which appears not at firſt, and in ſome never. And if this be not allowed to be ſo, I do not know how they can be excuſed from murder, who kill monſtrous births, (as we call them) becauſe of an unordinary ſhape, without knowing whether they have a rational ſoul or no; which can be no more diſcerned in a well-formed than ill-ſhaped infant, as ſoon as born. And who is it has informed us, that a rational ſoul can inhabit no tenement, unleſs it has juſt ſuch a ſort of frontiſpiece; or can join itſelf to, and inform no ſort of body but one that is juſt of ſuch an outward ſtructure?

§. 21. Now theſe leading qualities are beſt made known by ſhowing, and can hardly be made known otherwiſe. For the ſhape of an horſe, or caſſuary, will be but rudely and imperfectly imprinted on the mind by words; the ſight of the animals doth it a thouſand times better: and the idea of the particular colour of gold is not to be got by any deſcription of it, but only by the frequent exerciſe of the eyes about it, as is evident in thoſe who are uſed to this metal, who will frequently diſtinguiſh true from counterfeit, pure from adulterate, by the ſight; where others (who have as good eyes, but yet by uſe have not got the preciſe nice idea of that peculiar yellow) ſhall not perceive any difference. The like may be ſaid of thoſe other ſimple ideas, peculiar in their kind to any ſubſtance; for which preciſe ideas there are no peculiar names. The particular ringing ſound there is in gold, diſtinct from the ſound of other bodies, has no particular name annexed to it, no more than the particular yellow that belongs to that metal.

The ideas of their powers beſt by definition.

§. 22. But becauſe many of the ſimple ideas that make up our ſpecifick ideas of ſubſtances, are powers which lie not obvious to our ſenſes in the things as they

ordinarily appear; therefore in the signification of our names of substances, some part of the signification will be better made known by enumerating those simple ideas, than by showing the substance itself. For he that to the yellow shining colour of gold got by sight, shall, from my enumerating them, have the ideas of great ductility, fusibility, fixedness, and solubility in aq. regia, will have a perfecter idea of gold, than he can have by seeing a piece of gold, and thereby imprinting in his mind only its obvious qualities. But if the formal constitution of this shining, heavy, ductile thing (from whence all these its properties flow) lay open to our senses, as the formal constitution, or essence of a triangle does, the signification of the word gold might as easily be ascertained as that of triangle.

A reflection on the knowledge of spirits.

§. 23. Hence we may take notice how much the foundation of all our knowledge of corporeal things lies in our senses. For how spirits, separate from bodies (whose knowledge and ideas of these things are certainly much more perfect than ours) know them, we have no notion, no idea at all. The whole extent of our knowledge or imagination reaches not beyond our own ideas limited to our ways of perception. Though yet it be not to be doubted that spirits of a higher rank than those immersed in flesh, may have as clear ideas of the radical constitution of substances, as we have of a triangle, and so perceive how all their properties and operations flow from thence: but the manner how they come by that knowledge exceeds our conceptions.

4. Ideas also of substances must be conformable to things.

§. 24. But though definitions will serve to explain the names of substances as they stand for our ideas; yet they leave them not without great imperfection as they stand for things. For our names of substances being not put barely for our ideas, but being made use of ultimately to represent things, and so are put in their place; their signification must agree with the truth of things as well as with men's ideas. And therefore in substances we are not always to rest in the ordinary complex idea, commonly received as the signification

of

of that word, but muſt go a little farther, and inquire into the nature and properties of the things themſelves, and thereby perfect, as much as we can, our ideas of their diſtinct ſpecies; or elſe learn them from ſuch as are uſed to that ſort of things, and are experienced in them. For ſince it is intended their names ſhould ſtand for ſuch collections of ſimple ideas as do really exiſt in things themſelves, as well as for the complex idea in other men's minds, which in their ordinary acceptation they ſtand for: therefore to define their names right, natural hiſtory is to be inquired into; and their properties are, with care and examination, to be found out. For it is not enough, for the avoiding inconveniencies in diſcourſe and arguings about natural bodies and ſubſtantial things, to have learned, from the propriety of the language, the common, but confuſed, or very imperfect idea, to which each word is applied, and to keep them to that idea in our uſe of them: but we muſt, by acquainting ourſelves with the hiſtory of that ſort of things, rectify and ſettle our complex idea belonging to each ſpecific name; and in diſcourſe with others, (if we find them miſtake us) we ought to tell what the complex idea is, that we make ſuch a name ſtand for. This is the more neceſſary to be done by all thoſe who ſearch after knowledge and philoſophical verity, in that children, being taught words whilſt they have but imperfect notions of things, apply them at random, and without much thinking, and ſeldom frame determined ideas to be ſignified by them. Which cuſtom (it being eaſy, and ſerving well enough for the ordinary affairs of life and converſation) they are apt to continue when they are men: and ſo begin at the wrong end, learning words firſt and perfectly, but make the notions to which they apply thoſe words afterwards very overtly. By this means it comes to paſs, that men ſpeaking the proper language of their country, i. e. according to grammar rules of that language, do yet ſpeak very improperly of things themſelves; and, by their arguing one with another, make but ſmall progreſs in the diſcoveries of uſeful truths, and the knowledge of things, as they are to be found in themſelves, and not in our

imaginations; and it matters not much, for the improvement of our knowledge, how they are called.

Not eaſy to be made ſo.

§. 25. It were therefore to be wiſhed, that men, verſed in phyſical inquiries, and acquainted with the ſeveral ſorts of natural bodies, would ſet down thoſe ſimple ideas, wherein they obſerve the individuals of each ſort conſtantly to agree. This would remedy a great deal of that confuſion which comes from ſeveral perſons applying the ſame name to a collection of a ſmaller or greater number of ſenſible qualities, proportionably as they have been more or leſs acquainted with, or accurate in examining the qualities of any ſort of things which come under one denomination. But a dictionary of this ſort containing, as it were, a natural hiſtory, requires too many hands, as well as too much time, coſt, pains, and ſagacity, ever to be hoped for; and till that be done, we muſt content ourſelves with ſuch definitions of the names of ſubſtances as explain the ſenſe men uſe them in. And it would be well, where there is occaſion, if they would afford us ſo much. This yet is not uſually done; but men talk to one another, and diſpute in words, whoſe meaning is not agreed between them, out of a miſtake, that the ſignifications of common words are certainly eſtabliſhed, and the preciſe ideas they ſtand for perfectly known; and that it is a ſhame to be ignorant of them. Both which ſuppoſitions are falſe: no names of complex ideas having ſo ſettled determined ſignifications, that they are conſtantly uſed for the ſame preciſe ideas. Nor is it a ſhame for a man not to have a certain knowledge of any thing, but by the neceſſary ways of attaining it; and ſo it is no diſcredit not to know what preciſe idea any ſound ſtands for in another man's mind, without he declare it to me by ſome other way than barely uſing that ſound; there being no other way, without ſuch a declaration, certainly to know it. Indeed the neceſſity of communication by language brings men to an agreement in the ſignification of common words, within ſome tolerable latitude, that may ſerve for ordinary converſation: and ſo a man cannot be ſuppoſed wholly ignorant of the ideas which are annexed to words by common

mon uſe, in a language familiar to him. But common uſe, being but a very uncertain rule, which reduces itſelf at laſt to the ideas of particular men, proves often but a very variable ſtandard. But though ſuch a dictionary, as I have above-mentioned, will require too much time, coſt, and pains, to be hoped for in this age; yet methinks it is not unreaſonable to propoſe, that words ſtanding for things, which are known and diſtinguiſhed by their outward ſhapes, ſhould be expreſſed by little draughts and prints made of them. A vocabulary made after this faſhion would perhaps, with more eaſe, and in leſs time, teach the true ſignification of many terms, eſpecially in languages of remote countries or ages, and ſettle truer ideas in men's minds of ſeveral things, whereof we read the names in antient authors, than all the large and laborious comments of learned criticks. Naturaliſts, that treat of plants and animals, have found the benefit of this way: and he that has had occaſion to conſult them, will have reaſon to confeſs, that he has a clearer idea of apium or ibex, from a little print of that herb or beaſt, than he could have from a long definition of the names of either of them. And ſo no doubt he would have of ſtrigil and ſiſtrum, if inſtead of curry-comb and cymbal, which are the Engliſh names dictionaries render them by, he could ſee ſtamped in the margin ſmall pictures of theſe inſtruments, as they were in uſe amongſt the ancients. "Toga, tunica, pallium," are words eaſily tranſlated by gown, coat, and cloak; but we have thereby no more true ideas of the faſhion of thoſe habits amongſt the Romans, than we have of the faces of the taylors who made them. Such things as theſe, which the eye diſtinguiſhes by their ſhapes, would be beſt let into the mind by draughts made of them, and more determine the ſignification of ſuch words than any other words ſet for them, or made uſe of to define them. But this only by the by.

§. 26. Fifthly, if men will not be at the pains to declare the meaning of their words, and definitions of their terms are not to be had; yet this is the leaſt that can be expected, that in all diſcourſes, wherein one man pretends

5. By conſtancy in their ſignification.

to inſtruct or convince another, he ſhould uſe the ſame word conſtantly in the ſame ſenſe: if this were done (which no body can refuſe without great diſingenuity) many of the books extant might be ſpared; many of the controverſies in diſpute would be at an end; ſeveral of thoſe great volumes, ſwoln with ambiguous words, now uſed in one ſenſe, and by and by in another, would ſhrink into a very narrow compaſs; and many of the philoſophers (to mention no other) as well as poets works, might be contained in a nutſhell.

When the variation is to be explained.

§. 27. But after all, the proviſion of words is ſo ſcanty in reſpect of that infinite variety of thoughts, that men, wanting terms to ſuit their preciſe notions, will, notwithſtanding their utmoſt caution, be forced often to uſe the ſame word in ſomewhat different ſenſes. And though in the continuation of a diſcourſe, or the purſuit of an argument, there can be hardly room to digreſs into a particular definition, as often as a man varies the ſignification of any term; yet the import of the diſcourſe will, for the moſt part, if there be no deſigned fallacy, ſufficiently lead candid and intelligent readers into the true meaning of it: but where there is not ſufficient to guide the reader, there it concerns the writer to explain his meaning, and ſhow in what ſenſe he there uſes that term.

BOOK IV.

CHAP. I.

Of Knowledge in General.

Our knowledge converſant about our ideas.

§. 1. SINCE the mind, in all its thoughts and reaſonings, hath no other immediate object but its own ideas, which it alone does or can contemplate; it is evident, that our knowledge is only converſant about them.

§. 2. Knowledge then seems to me to be nothing but the perception of the connexion and agreement, or disagreement and repugnancy, of any of our ideas. In this alone it consists. Where this perception is, there is knowledge; and where it is not, there, though we may fancy, guess, or believe, yet we always come short of knowledge. For when we know that white is not black, what do we else but perceive that these two ideas do not agree? When we possess ourselves with the utmost security of the demonstration, that the three angles of a triangle are equal to two right ones, what do we more but perceive, that equality to two right ones does necessarily agree to, and is inseparable from the three angles of a triangle *?

Knowledge is the perception of the agreement or disagreement of two ideas.

§. 3.

* The placing of certainty, as Mr. Locke does, in the perception of the agreement or disagreement of our ideas, the bishop of Worcester suspects may be of dangerous consequence to that article of faith which he has endeavoured to defend; to which Mr. Locke answers, † since your lordship hath not, as I remember, shown, or gone about to show, how this proposition, viz. that certainty consists in the perception of the agreement or disagreement of two ideas, is opposite or inconsistent with that article of faith which your lordship has endeavoured to defend; it is plain, it is but your lordship's fear, that it may be of dangerous consequence to it, which, as I humbly conceive, is no proof that it is any way inconsistent with that article.

No body, I think, can blame your lordship, or any one else, for being concerned for any article of the christian faith; but if that concern (as it may, and as we know it has done) makes any one apprehend danger, where no danger is, are we, therefore, to give up and condemn any proposition, because any one, though of the first rank and magnitude, fears it may be of dangerous consequence to any truth of religion, without showing that it is so? If such fears be the measures whereby to judge of truth and falshood, the affirming that there are antipodes would be still a heresy; and the doctrine of the motion of the earth must be rejected, as overthrowing the truth of the scripture; for of that dangerous consequence it has been apprehended to be, by many learned and pious divines, out of their great concern for religion. And yet, notwithstanding those great apprehensions of what dangerous consequence it might be, it is now universally received by learned men, as an undoubted truth; and writ for by some, whose belief of the scripture is not at all questioned; and particularly, very lately, by a divine of the church of England, with great strength of reason, in his wonderfully ingenious New Theory of the Earth.

† In his 2d letter to the bishop of Worcester.

The

This agreement fourfold.

§. 3. But to understand a little more distinctly wherein this agreement or disagreement consists, I think we may reduce it all to these four sorts:

1. Identity, or diversity.
2. Relation.
3. Co-existence, or necessary connexion.
4. Real existence.

1. Of identity or diversity.

§. 4. First, as to the first sort of agreement or disagreement, viz. identity or diversity. It is the first act of the mind, when it has any sentiments or ideas at all, to perceive its ideas; and so far as it perceives them, to know each what it is, and thereby also to perceive their difference, and that one is not another. This is so absolutely

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The reason your lordship gives of your fears, that it may be of such dangerous consequence to that article of faith which your lordship endeavours to defend, though it occur in more places than one, is only this, viz. That it is made use of by ill men to do mischief, i. e. to oppose that article of faith which your lordship hath endeavoured to defend. But, my lord, if it be a reason to lay by any thing as bad, because it is, or may be used to an ill purpose, I know not what will be innocent enough to be kept. Arms, which were made for our defence, are sometimes made use of to do mischief; and yet they are not thought of dangerous consequence for all that. No body lays by his sword and pistols, or thinks them of such dangerous consequence as to be neglected, or thrown away, because robbers, and the worst of men, sometimes make use of them, to take away honest men's lives or goods. And the reason is, because they were designed, and will serve to preserve them. And who knows but this may be the present case? If your lordship thinks, that placing of certainty in the perception of the agreement or disagreement of ideas be to be rejected as false, because you apprehend it may be of dangerous consequence to that article of faith: on the other side, perhaps others, with me, may think it a defence against error, and so (as being of good use) to be received and adhered to.

I would not, my lord, be hereby thought to set up my own, or any one's judgement against your lordship's. But I have said this only to show, whilst the argument lies for or against the truth of any proposition, barely in an imagination that it may be of consequence to the supporting or overthrowing of any remote truth; it will be impossible, that way, to determine of the truth or falshood of that proposition. For imagination will be set up against imagination, and the stronger probably will be against your lordship; the strongest imaginations being usually in the weakest heads. The only way, in this case, to put it past doubt, is to show the inconsistency of the two propositions; and then it will be seen, that one overthrows the other; the true, the false one.

Your

lutely neceſſary, that without it there could be no knowledge, no reaſoning, no imagination, no diſtinct thoughts at all. By this the mind clearly and infallibly perceives each idea to agree with itſelf, and to be what it is; and all diſtinct ideas to diſagree, i. e. the one not to be the other: and this it does without pains, labour, or deduction; but at firſt view, by its natural power of perception and diſtinction. And though men of art have reduced this into thoſe general rules, "what is, is;" and "it is impoſſible for the ſame thing to be and not to be;" for ready application in all caſes, wherein there may be occaſion to reflect on it: yet it is certain, that the firſt exerciſe of this faculty is about particular ideas. A man infallibly knows, as ſoon as ever he has them in his mind, that the ideas he calls white and round, are the

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Your lordſhip ſays indeed, this is a new method of certainty. I will not ſay ſo myſelf, for fear of deſerving a ſecond reproof from your lordſhip, for being too forward to aſſume to myſelf the honour of being an original. But this, I think, gives me occaſion, and will excuſe me from being thought impertinent, if I aſk your lordſhip, whether there be any other, or older method of certainty? and what it is? For, if there be no other, nor older than this, either this was always the method of certainty, and ſo mine is no new one; or elſe the world is obliged to me for this new one, after having been ſo long in the want of ſo neceſſary a thing as a method of certainty. If there be an older, I am ſure your lordſhip cannot but know it; your condemning mine as new, as well as your thorough inſight into antiquity, cannot but ſatisfy every body that you do. And therefore to ſet the world right in a thing of that great concernment, and to overthrow mine, and thereby prevent the dangerous conſequence there is in my having unreaſonably ſtarted it, will not, I humbly conceive, miſbecome your lordſhip's care of that article you have endeavoured to defend, nor the good-will you bear to truth in general. For I will be anſwerable for myſelf, that I ſhall; and I think I may be for all others, that they all will give off the placing of certainty in the perception of the agreement or diſagreement of ideas, if your lordſhip will be pleaſed to ſhow, that it lies in any thing elſe.

But truly, not to aſcribe to myſelf an invention of what has been as old as knowledge is in the world, I muſt own, I am not guilty of what your lordſhip is pleaſed to call ſtarting new methods of certainty. Knowledge, ever ſince there has been any in the world, has conſiſted in one particular action in the mind; and ſo, I conceive, will continue to do to the end of it. And to ſtart new methods of knowledge, or certainty, (for they are to me the ſame thing) i. e. to find out and propoſe new methods of attaining knowledge, either with more eaſe and quickneſs, or in things yet unknown, is what I think no body could blame: but this is not that which your lordſhip here means, by new methods of certainty. Your lord-

the very ideas they are, and that they are not other ideas which he calls red or ſquare. Nor can any maxim or propoſition in the world make him know it clearer or ſurer than he did before, and without any ſuch general rule. This then is the firſt agreement or diſagreement, which the mind perceives in its ideas; which it always perceives at firſt ſight: and if there ever happen any doubt about it, it will always be found to be about the names, and not the ideas themſelves, whoſe identity and diverſity will always be perceived, as ſoon and clearly as the ideas themſelves are; nor can it poſſibly be otherwiſe.

2. Relative. §. 5. Secondly, the next ſort of agreement or diſagreement, the mind perceives in any of its ideas, may, I think, be called relative, and is nothing but the perception of the relation between any

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lordſhip, I think, means by it, the placing of certainty in ſomething, wherein either it does not conſiſt, or elſe wherein it was not placed before now; if this be to be called a new method of certainty. As to the latter of theſe, I ſhall know whether I am guilty or no, when your lordſhip will do me the favour to tell me, wherein it was placed before: which your lordſhip knows I profeſſed myſelf ignorant of, when I writ my book, and ſo I am ſtill. But if ſtarting new methods of certainty, be the placing of certainty in ſomething wherein it does not conſiſt; whether I have done that or no, I muſt appeal to the experience of mankind.

There are ſeveral actions of men's minds, that they are conſcious to themſelves of performing, as willing, believing, knowing, &c. which they have ſo particular ſenſe of, that they can diſtinguiſh them one from another; or elſe they could not ſay, when they willed, when they believed, and when they knew any thing. But though theſe actions were different enough from one another, not to be confounded by thoſe who ſpoke of them, yet no body, that I had met with, had, in their writings, particularly ſet down wherein the act of knowing preciſely conſiſted.

To this reflection upon the actions of my own mind the ſubject of my Eſſay concerning Human Underſtanding naturally led me; wherein if I have done any thing new, it has been to deſcribe to others, more particularly than had been done before, what it is their minds do when they perform that action which they call knowing; and if, upon examination, they obſerve I have given a true account of that action of their minds in all the parts of it, I ſuppoſe it will be in vain to diſpute againſt what they find and feel in themſelves. And if I have not told them right and exactly what they find and feel in themſelves, when their minds perform the act of knowing, what I have ſaid will be all in vain; men will not be perſuaded againſt their ſenſes. Knowledge is an internal perception of their minds; and if, when they reflect on it, they find it is not what I have ſaid it is, my groundleſs conceit will not be hearkened to, but be exploded by every body, and die of itſelf: and no body need to be at any pains to drive

any two ideas, of what kind ſoever, whether ſubſtances, modes, or any other. For ſince all diſtinct ideas muſt eternally be known not to be the ſame, and ſo be univerſally and conſtantly denied one of another, there could be no room for any poſitive knowledge at all, if we could not perceive any relation between our ideas, and find out the agreement or diſagreement they have one with another, in ſeveral ways the mind takes of comparing them.

3. Of co-exiſtence.

§. 6. Thirdly, the third ſort of agreement, or diſagreement, to be found in our ideas, which the perception of the mind is employed about, is co-exiſtence, or non-co-exiſtence in the ſame ſubject; and this belongs particularly to ſubſtances. Thus when we pronounce concerning gold that

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drive it out of the world. So impoſſible is it to find out, or ſtart new methods of certainty, or to have them received, if any one places it in any thing, but in that wherein it really conſiſts: much leſs can any one be in danger to be miſled into error, by any ſuch new, and to every one viſibly ſenſeleſs project. Can it be ſuppoſed, that any one could ſtart a new method of ſeeing, and perſuade men thereby, that they do not ſee what they do ſee? Is it to be feared, that any one can caſt ſuch a miſt over their eyes, that they ſhould not know when they ſee, and ſo be led out of their way by it?

Knowledge, I find in myſelf, and I conceive in others, conſiſts in the perception of the agreement or diſagreement of the immediate objects of the mind in thinking, which I call ideas: but whether it does ſo in others or no, muſt be determined by their own experience, reflecting upon the action of their mind in knowing; for that I cannot alter, nor, I think, they themſelves. But whether they will call thoſe immediate objects of their minds in thinking ideas or no, is perfectly in their own choice. If they diſlike that name, they may call them notions or conceptions, or how they pleaſe; it matters not, if they uſe them ſo as to avoid obſcurity and confuſion. If they are conſtantly uſed in the ſame and a known ſenſe, every one has the liberty to pleaſe himſelf in his terms; there lies neither truth, nor error, nor ſcience, in that; though thoſe that take them for things, and not for what they are, bare arbitrary ſigns of our ideas, make a great deal ado often about them; as if ſome great matter lay in the uſe of this or that ſound. All that I know, or can imagine of difference about them, is, that thoſe words are always beſt, whoſe ſignifications are beſt known in the ſenſe they are uſed; and ſo are leaſt apt to breed confuſion.

My lord, your lordſhip hath been pleaſed to find fault with my uſe of the new term, ideas, without telling me a better name for the immediate objects of the mind in thinking. Your lordſhip alſo has been pleaſed to find fault with my definition of knowledge, without doing me the favour

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that it is fixed, our knowledge of this truth amounts to no more but this, that fixedneſs, or a power to remain in the fire unconſumed, is an idea that always accompanies, and is joined with that particular ſort of yellowneſs, weight, fuſibility, malleableneſs, and ſolubility in aq. regia, which make our complex idea, ſignified by the word gold.

4. Of real exiſtence.

§. 7. Fourthly, the fourth and laſt ſort is that of actual and real exiſtence agreeing to any idea. Within theſe four ſorts of agreement or diſagreement, is, I ſuppoſe, contained all the knowledge we have, or are capable of: for all the inquiries we can make concerning any of our ideas, all that we know or can affirm concerning any of them, is, that it is, or is not, the ſame with ſome other; that it does,

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to give me a better. For it is only about my definition of knowledge that all this ſtir concerning certainty is made. For, with me, to know and to be certain, is the ſame thing; what I know, that I am certain of; and what I am certain of, that I know. What reaches to knowledge, I think may be called certainty; and what comes ſhort of certainty, I think cannot be called knowledge; as your lordſhip could not but obſerve in the 18th ſection of chap. 4. of my 4th book, which you have quoted.

My definition of knowledge ſtands thus: "knowledge ſeems to me to be nothing but the perception of the connexion and agreement, or diſagreement and repugnancy of any of our ideas." This definition your lordſhip diſlikes, and apprehends it may be of dangerous conſequence as to that article of chriſtian faith which your lordſhip hath endeavoured to defend. For this there is a very eaſy remedy: it is but for your lordſhip to ſet aſide this definition of knowledge by giving us a better, and this danger is over. But your lordſhip chooſes rather to have a controverſy with my book for having it in it, and to put me upon the defence of it; for which I muſt acknowledge myſelf obliged to your lordſhip for affording me ſo much of your time, and for allowing me the honour of converſing ſo much with one ſo far above me in all reſpects.

Your lordſhip ſays, it may be of dangerous conſequence to that article of chriſtian faith which you have endeavoured to defend. Though the laws of diſputing allow bare denial as a ſufficient anſwer to ſayings, without any offer of a proof: yet, my lord, to ſhow how willing I am to give your lordſhip all ſatisfaction, in what you apprehend may be of dangerous conſequence in my book, as to that article, I ſhall not ſtand ſtill ſullenly, and put your lordſhip upon the difficulty of ſhowing wherein that danger lies; but ſhall on the other ſide, endeavour to ſhow your lordſhip that that definition of mine, whether true or falſe, right or wrong, can be of no dangerous conſequence to that article of faith. The reaſon which I ſhall offer for it, is this: becauſe it can be of no conſequence to it at all.

That

does, or does not, always co-exiſt with ſome other idea in the ſame ſubject; that it has this or that relation with ſome other idea; or that it has a real exiſtence without the mind. Thus blue is not yellow; is of identity: two triangles upon equal baſes between two parallels are equal; is of relation: iron is ſuſceptible of magnetical impreſſions; is of co-exiſtence: God is; is of real exiſtence. Though identity and co-exiſtence are truly nothing but relations, yet they are ſuch peculiar ways of agreement or diſagreement of our ideas, that they deſerve well to be conſidered as diſtinct heads, and not under relation in general; ſince they are ſo different grounds of affirmation and negation, as will eaſily appear to any one, who will but reflect on what is ſaid in ſeveral

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That which your lordſhip is afraid it may be dangerous to, is an article of faith: that which your lordſhip labours and is concerned for, is the certainty of faith. Now, my lord, I humbly conceive the certainty of faith, if your lordſhip thinks fit to call it ſo, has nothing to do with the certainty of knowledge. As to talk of the certainty of faith, ſeems all one to me, as to talk of the knowledge of believing, a way of ſpeaking not eaſy to me to underſtand.

Place knowledge in what you will; ſtart what new methods of certainty you pleaſe, that are apt to leave men's minds more doubtful than before; place certainty on ſuch ground as will leave little or no knowledge in the world: (for theſe are the arguments your lordſhip uſes againſt my definition of knowledge) this ſhakes not at all, nor in the leaſt concerns the aſſurance of faith; that is quite diſtinct from it, neither ſtands nor falls with knowledge.

Faith ſtands by itſelf, and upon grounds of its own; nor can be removed from them, and placed on thoſe of knowledge. Their grounds are ſo far from being the ſame, or having any thing common, that when it is brought to certainty, faith is deſtroyed; it is knowledge then, and faith no longer.

With what aſſurance ſoever of believing I aſſent to any article of faith, ſo that I ſtedfaſtly venture my all upon it, it is ſtill but believing. Bring it to certainty, and it ceaſes to be faith. I believe that Jeſus Chriſt was crucified, dead, and buried, roſe again the third day from the dead, and aſcended into heaven: let now ſuch methods of knowledge or certainty be ſtarted, as leave men's minds more doubtful than before; let the grounds of knowledge be reſolved into what any one pleaſes, it touches not my faith; the foundation of that ſtands as ſure as before, and cannot be at all ſhaken by it; and one may as well ſay, that any thing that weakens the ſight, or caſts a miſt before the eyes, endangers the hearing; as that any thing which alters the nature of knowledge (if that could be done) ſhould be of dangerous conſequence to an article of faith.

ſeveral places of this eſſay. I ſhould not proceed to examine the ſeveral degrees of our knowledge, but that it is neceſſary firſt to conſider the different acceptations of the word knowledge.

Knowledge actual or habitual.

§. 8. There are ſeveral ways wherein the mind is poſſeſſed of truth, each of which is called knowledge.

1. There is actual knowledge, which is the preſent view the mind has of the agreement or diſagreement of any of its ideas, or of the relation they have one to another.

2. A man is ſaid to know any propoſition, which having been once laid before his thoughts, he evidently perceived the agreement or diſagreement of the ideas whereof it conſiſts; and ſo lodged it in his memory, that whenever that propoſition comes again to be reflected on, he, without doubt or heſitation, embraces the right ſide, aſſents to, and is certain of the truth of it. This, I think, one may call habitual knowledge: and thus a man may be ſaid to know all thoſe truths which are lodged in his memory, by a foregoing clear and full perception, whereof the mind is aſſured paſt doubt, as often as it has occaſion to reflect on them. For our finite underſtandings being able to think clearly and diſtinctly but on one thing at once, if men had no knowledge of any more than what they actually thought on, they would all be very ignorant; and he that knew moſt, would know but one truth, that being all he was able to think on at one time.

Whether then I am or am not miſtaken, in the placing certainty in the perception of the agreement or diſagreement of ideas; whether this account of knowledge be true or falſe, enlarges or ſtraitens the bounds of it more than it ſhould; faith ſtill ſtands upon its own baſis, which is not at all altered by it; and every article of that has juſt the ſame unmoved foundation, and the very ſame credibility, that it had before. So that, my lord, whatever I have ſaid about certainty, and how much ſoever I may be out in it, if I am miſtaken, your lordſhip has no reaſon to apprehend any danger to any article of faith from thence; every one of them ſtands upon the ſame bottom it did before, out of the reach of what belongs to knowledge and certainty. And thus much of my way of certainty by ideas; which, I hope, will ſatisfy your lordſhip how far it is from being dangerous to any article of the chriſtian faith whatſoever.

§. 9.

§. 9. Of habitual knowledge, there are alſo, vulgarly ſpeaking, two degrees:

Habitual knowledge twofold.

Firſt, the one is of ſuch truths laid up in the memory, as whenever they occur to the mind, it actually perceives the relation is between thoſe ideas. And this is in all thoſe truths, whereof we have an intuitive knowledge; where the ideas themſelves, by an immediate view, diſcover their agreement or diſagreement one with another.

Secondly, the other is of ſuch truths, whereof the mind having been convinced, it retains the memory of the conviction, without the proofs. Thus a man that remembers certainly that he once perceived the demonſtration, that the three angles of a triangle are equal to two right ones, is certain that he knows it, becauſe he cannot doubt the truth of it. In his adherence to a truth, where the demonſtration by which it was at firſt known is forgot, though a man may be thought rather to believe his memory than really to know, and this way of entertaining a truth ſeemed formerly to me like ſomething between opinion and knowledge; a ſort of aſſurance which exceeds bare belief, for that relies on the teſtimony of another: yet upon a due examination I find it comes not ſhort of perfect certainty, and is in effect true knowledge. That which is apt to miſlead our firſt thoughts into a miſtake in this matter, is, that the agreement or diſagreement of the ideas in this caſe is not perceived, as it was at firſt, by an actual view of all the intermediate ideas, whereby the agreement or diſagreement of thoſe in the propoſition was at firſt perceived; but by other intermediate ideas, that ſhow the agreement or diſagreement of the ideas contained in the propoſition whoſe certainty we remember. For example, in this propoſition, that the three angles of a triangle are equal to two right ones, one who has ſeen and clearly perceived the demonſtration of this truth, knows it to be true, when that demonſtration is gone out of his mind; ſo that at preſent it is not actually in view, and poſſibly cannot be recollected: but he knows it in a different way from what he did before. The agreement of the two ideas joined in that propoſition is per-

ceived, but it is by the intervention of other ideas than thoſe which at firſt produced that perception. He remembers, i. e. he knows (for remembrance is but the reviving of ſome paſt knowledge) that he was once certain of the truth of this propoſition, that the three angles of a triangle are equal to two right ones. The immutability of the ſame relations between the ſame immutable things, is now the idea that ſhows him, that if the three angles of a triangle were once equal to two right ones, they will always be equal to two right ones. And hence he comes to be certain, that what was once true in the caſe, is always true; what ideas once agreed, will always agree; and conſequently what he once knew to be true, he will always know to be true, as long as he can remember that he once knew it. Upon this ground it is, that particular demonſtrations in mathematicks afford general knowledge. If then the perception that the ſame ideas will eternally have the ſame habitudes and relations, be not a ſufficient ground of knowledge, there could be no knowledge of general propoſitions in mathematicks; for no mathematical demonſtration would be any other than particular: and when a man had demonſtrated any propoſition concerning one triangle or circle, his knowledge would not reach beyond that particular diagram. If he would extend it further, he muſt renew his demonſtration in another inſtance, before he could know it to be true in another like triangle, and ſo on: by which means one could never come to the knowledge of any general propoſitions. Nobody, I think, can deny that Mr. Newton certainly knows any propoſition, that he now at any time reads in his book, to be true; though he has not in actual view that admirable chain of intermediate ideas, whereby he at firſt diſcovered it to be true. Such a memory as that, able to retain ſuch a train of particulars, may be well thought beyond the reach of human faculties; when the very diſcovery, perception, and laying together that wonderful connexion of ideas, is found to ſurpaſs moſt readers comprehenſion. But yet it is evident, the author himſelf knows the propoſition to be true, remembering he once ſaw the connexion of thoſe

ideas, as certainly as he knows ſuch a man wounded another, remembering that he ſaw him run him through. But becauſe the memory is not always ſo clear as actual perception, and does in all men more or leſs decay in length of time, this amongſt other differences is one, which ſhows that demonſtrative knowledge is much more imperfect than intuitive, as we ſhall ſee in the following chapter.

CHAP. II.

Of the Degrees of our Knowledge.

§. 1. ALL our knowledge conſiſting, as I have ſaid, in the view the mind has of its own ideas, which is the utmoſt light and greateſt certainty we, with our faculties, and in our way of knowledge, are capable of; it may not be amiſs to conſider a little the degrees of its evidence. The different clearneſs of our knowledge ſeems to me to lie in the different way of perception the mind has of the agreement or diſagreement of any of its ideas. For if we will reflect on our own ways of thinking, we ſhall find that ſometimes the mind perceives the agreement or diſagreement of two ideas immediately by themſelves, without the intervention of any other: and this, I think, we may call intuitive knowledge. For in this the mind is at no pains of proving or examining, but perceives the truth, as the eye doth light, only by being directed toward it. Thus the mind perceives, that white is not black, that a circle is not a triangle, that three are more than two, and equal to one and two. Such kind of truths the mind perceives at the firſt ſight of the ideas together, by bare intuition, without the intervention of any other idea; and this kind of knowledge is the cleareſt and moſt certain, that human frailty is capable of. This part of knowledge is irreſiſtible, and like bright ſun-ſhine forces itſelf immediately to be perceived, as ſoon as ever the mind turns its view that way; Intuitive.

and leaves no room for hesitation, doubt, or examination, but the mind is presently filled with the clear light of it. It is on this intuition that depends all the certainty and evidence of all our knowledge; which certainty every one finds to be so great, that he cannot imagine, and therefore not require a greater: for a man cannot conceive himself capable of a greater certainty, than to know that any idea in his mind is such as he perceives it to be; and that two ideas, wherein he perceives a difference, are different and not precisely the same. He that demands a greater certainty than this, demands he knows not what, and shows only that he has a mind to be a sceptick, without being able to be so. Certainty depends so wholly on this intuition, that in the next degree of knowledge, which I call demonstrative, this intuition is necessary in all the connexions of the intermediate ideas, without which we cannot attain knowledge and certainty.

Demonstrative.

§. 2. The next degree of knowledge is, where the mind perceives the agreement or disagreement of any ideas, but not immediately. Though wherever the mind perceives the agreement or disagreement of any of its ideas, there be certain knowledge; yet it does not always happen, that the mind sees that agreement or disagreement which there is between them, even where it is discoverable: and in that case remains in ignorance, and at most gets no farther than a probable conjecture. The reason why the mind cannot always perceive presently the agreement or disagreement of two ideas, is, because those ideas, concerning whose agreement or disagreement the inquiry is made, cannot by the mind be so put together as to show it. In this case then, when the mind cannot so bring its ideas together, as by their immediate comparison, and as it were juxta-position or application one to another, to perceive their agreement, or disagreement, it is fain, by the intervention of other ideas (one or more, as it happens) to discover the agreement or disagreement which it searches; and this is that which we call reasoning. Thus the mind being willing to know the agreement or disagreement in bigness, between

tween the three angles of a triangle and two right ones, cannot by an immediate view and comparing them do it: because the three angles of a triangle cannot be brought at once, and be compared with any one or two angles; and so of this the mind has no immediate, no intuitive knowledge. In this case the mind is fain to find out some other angles, to which the three angles of a triangle have an equality; and, finding those equal to two right ones, comes to know their equality to two right ones.

Depends on proofs.

§. 3. Those intervening ideas which serve to show the agreement of any two others, are called proofs; and where the agreement and disagreement is by this means plainly and clearly perceived, it is called demonstration, it being shown to the understanding, and the mind made to see that it is so. A quickness in the mind to find out these intermediate ideas (that shall discover the agreement or disagreement of any other) and to apply them right, is, I suppose, that which is called sagacity.

But not so easy.

§. 4. This knowledge by intervening proofs, though it be certain, yet the evidence of it is not altogether so clear and bright, nor the assent so ready, as in intuitive knowledge. For though, in demonstration, the mind does at last perceive the agreement or disagreement of the ideas it considers; yet it is not without pains and attention: there must be more than one transient view to find it. A steady application and pursuit are required to this discovery: and there must be a progression by steps and degrees, before the mind can in this way arrive at certainty, and come to perceive the agreement or repugnancy between two ideas that need proofs and the use of reason to show it.

Not without precedent doubt.

§. 5. Another difference between intuitive and demonstrative knowledge, is, that though in the latter all doubt be removed, when by the intervention of the intermediate ideas the agreement or disagreement is perceived; yet before the demonstration there was a doubt, which in intuitive knowledge cannot happen to the mind, that has its fa-

culty of perception left to a degree capable of distinct ideas, no more than it can be a doubt to the eye (that can distinctly see white and black) whether this ink and this paper be all of a colour. If there be sight in the eyes, it will at first glimpse, without hesitation, perceive the words printed on this paper different from the colour of the paper: and so if the mind have the faculty of distinct perceptions, it will perceive the agreement or disagreement of those ideas that produce intuitive knowledge. If the eyes have lost the faculty of seeing, or the mind of perceiving, we in vain inquire after the quickness of sight in one, or clearness of perception in the other.

Not so clear.

§. 6. It is true, the perception produced by demonstration is also very clear, yet it is often with a great abatement of that evident lustre and full assurance, that always accompany that which I call intuitive; like a face reflected by several mirrors one to another, where as long as it retains the similitude and agreement with the object, it produces a knowledge; but it is still in every successive reflection with a lessening of that perfect clearness and distinctness, which is in the first, till at last, after many removes, it has a great mixture of dimness, and is not at first sight so knowable, especially to weak eyes. Thus it is with knowledge made out by a long train of proof.

Each step must have intuitive evidence.

§. 7. Now, in every step reason makes in demonstrative knowledge, there is an intuitive knowledge of that agreement or disagreement it seeks with the next intermediate idea, which it uses as a proof: for if it were not so, that yet would need a proof; since without the perception of such agreement or disagreement, there is no knowledge produced. If it be perceived by itself, it is intuitive knowledge: if it cannot be perceived by itself, there is need of some intervening idea, as a common measure to show their agreement or disagreement. By which it is plain, that every step in reasoning that produces knowledge, has intuitive certainty; which when the mind perceives, there is no more required, but to remember it to make the agreement or disagreement of the

the ideas, concerning which we inquire, visible and certain. So that to make any thing a demonstration, it is necessary to perceive the immediate agreement of the intervening ideas, whereby the agreement or disagreement of the two ideas under examination (whereof the one is always the first, and the other the last in the account) is found. This intuitive perception of the agreement or disagreement of the intermediate ideas, in each step and progression of the demonstration, must also be carried exactly in the mind, and a man must be sure that no part is left out: which because in long deductions, and the use of many proofs, the memory does not always so readily and exactly retain; therefore it comes to pass, that this is more imperfect than intuitive knowledge, and men embrace often falshood for demonstrations.

Hence the mistake "ex præcognitis & præconcessis."

§. 8. The necessity of this intuitive knowledge, in each step of scientifical or demonstrative reasoning, gave occasion, I imagine, to that mistaken axiom, that all reasoning was "ex præcognitis & præconcessis;" which how far it is mistaken, I shall have occasion to show more at large, when I come to consider propositions, and particularly those propositions which are called maxims; and to show that it is by a mistake, that they are supposed to be the foundations of all our knowledge and reasonings.

Demonstration not limited to quantity.

§. 9. It has been generally taken for granted, that mathematicks alone are capable of demonstrative certainty: but to have such an agreement or disagreement, as may intuitively be perceived, being, as I imagine, not the privilege of the ideas of number, extension, and figure alone, it may possibly be the want of due method and application in us, and not of sufficient evidence in things, that demonstration has been thought to have so little to do in other parts of knowledge, and been scarce so much as aimed at by any but mathematicians. For whatever ideas we have, wherein the mind can perceive the immediate agreement or disagreement that is between them, there the mind is capable of intuitive knowledge; and where it can perceive the agreement or disagreement

ment of any two ideas, by an intuitive perception of the agreement or disagreement they have with any intermediate ideas, there the mind is capable of demonstration, which is not limited to ideas of extension, figure, number, and their modes.

Why it has been so thought.

§. 10. The reason why it has been generally sought for, and supposed to be only in those, I imagine has been not only the general usefulness of those sciences; but because, in comparing their equality or excess, the modes of numbers have every the least difference very clear and perceivable: and though in extension, every the least excess is not so perceptible, yet the mind has found out ways to examine and discover demonstratively the just equality of two angles, or extensions, or figures: and both these, i. e. numbers and figures, can be set down by visible and lasting marks, wherein the ideas under consideration are perfectly determined; which for the most part they are not, where they are marked only by names and words.

§. 11. But in other simple ideas, whose modes and differences are made and counted by degrees, and not quantity, we have not so nice and accurate a distinction of their differences, as to perceive and find ways to measure their just equality, or the least differences. For those other simple ideas, being appearances of sensations, produced in us by the size, figure, number, and motion of minute corpuscles singly insensible; their different degrees also depend upon the variation of some, or of all those causes: which since it cannot be observed by us in particles of matter, whereof each is too subtile to be perceived, it is impossible for us to have any exact measures of the different degrees of these simple ideas. For supposing the sensation or idea we name whiteness be produced in us by a certain number of globules, which, having a verticity about their own centres, strike upon the retina of the eye, with a certain degree of rotation, as well as progressive swiftness; it will hence easily follow, that the more the superficial parts of any body are so ordered, as to reflect the greater number of globules of light, and to give them the proper rotation, which

which is fit to produce this ſenſation of white in us, the more white will that body appear, that from an equal ſpace ſends to the retina the greater number of ſuch corpuſcles, with that peculiar ſort of motion. I do not ſay, that the nature of light conſiſts in very ſmall round globules, nor of whiteneſs in ſuch a texture of parts, as gives a certain rotation to theſe globules, when it reflects them; for I am not now treating phyſically of light or colours. But this, I think, I may ſay, that I cannot (and I would be glad any one would make intelligible that he did) conceive how bodies without us can any ways affect our ſenſes, but by the immediate contact of the ſenſible bodies themſelves, as in taſting and feeling, or the impulſe of ſome inſenſible particles coming from them, as in ſeeing, hearing, and ſmelling; by the different impulſe of which parts, cauſed by their different ſize, figure, and motion, the variety of ſenſations is produced in us.

§. 12. Whether then they be globules, or no; or whether they have a verticity about their own centres that produces the idea of whiteneſs in us; this is certain, that the more particles of light are reflected from a body, fitted to give them that peculiar motion, which produces the ſenſation of whiteneſs in us; and poſſibly too, the quicker that peculiar motion is; the whiter does the body appear, from which the greater number are reflected, as is evident in the ſame piece of paper put in the ſun-beams, in the ſhade, and in a dark hole; in each of which it will produce in us the idea of whiteneſs in far different degrees.

§. 13. Not knowing therefore what number of particles, nor what motion of them is fit to produce any preciſe degree of whiteneſs, we cannot demonſtrate the certain equality of any two degrees of whiteneſs, becauſe we have no certain ſtandard to meaſure them by, nor means to diſtinguiſh every the leaſt real difference, the only help we have being from our ſenſes, which in this point fail us. But where the difference is ſo great, as to produce in the mind clearly diſtinct ideas, whoſe differences can be perfectly retained, there theſe ideas or colours, as we ſee in different kinds, as blue and red,

are

are as capable of demonſtration, as ideas of number and extenſion. What I have here ſaid of whiteneſs and colours, I think, holds true in all ſecondary qualities, and their modes.

Senſitive knowledge of particular exiſtence.

§. 14. Theſe two, viz. intuition and demonſtration, are the degrees of our knowledge; whatever comes ſhort of one of theſe, with what aſſurance ſoever embraced, is but faith, or opinion, but not knowledge, at leaſt in all general truths. There is, indeed, another perception of the mind, employed about the particular exiſtence of finite beings without us; which going beyond bare probability, and yet not reaching perfectly to either of the foregoing degrees of certainty, paſſes under the name of knowledge. There can be nothing more certain, than that the idea we receive from an external object is in our minds; this is intuitive knowledge. But whether there be any thing more than barely that idea in our minds, whether we can thence certainly infer the exiſtence of any thing without us, which correſponds to that idea, is that, whereof ſome men think there may be a queſtion made; becauſe men may have ſuch ideas in their minds, when no ſuch thing exiſts, no ſuch object affects their ſenſes. But yet here, I think, we are provided with an evidence, that puts us paſt doubting: for I aſk any one, whether he be not invincibly conſcious to himſelf of a different perception, when he looks on the ſun by day, and thinks on it by night; when he actually taſtes wormwood, or ſmells a roſe, or only thinks on that ſavour or odour? We as plainly find the difference there is between an idea revived in our minds by our own memory, and actually coming into our minds by our ſenſes, as we do between any two diſtinct ideas. If any one ſay, a dream may do the ſame thing, and all theſe ideas may be produced in us without any external objects; he may pleaſe to dream that I make him this anſwer; 1. That it is no great matter, whether I remove this ſcruple, or no: where all is but dream, reaſoning and arguments are of no uſe, truth and knowledge nothing. 2. That I believe he will allow a very manifeſt difference between dreaming of being in the fire, and being

being actually in it. But yet if he be resolved to appear so sceptical, as to maintain, that what I call being actually in the fire is nothing but a dream; and we cannot thereby certainly know, that any such thing as fire actually exists without us: I answer, that we certainly finding that pleasure or pain follows upon the application of certain objects to us, whose existence we perceive, or dream that we perceive, by our senses; this certainty is as great as our happiness or misery, beyond which we have no concernment to know, or to be. So that, I think, we may add to the two former sorts of knowledge this also of the existence of particular external objects, by that perception and consciousness we have of the actual entrance of ideas from them, and allow these three degrees of knowledge, viz. intuitive, demonstrative, and sensitive: in each of which there are different degrees and ways of evidence and certainty.

Knowledge not always clear, where the ideas are so.

§. 15. But since our knowledge is founded on, and employed about, our ideas only, will it not follow from thence, that it is conformable to our ideas; and that where our ideas are clear and distinct, or obscure and confused, our knowledge will be so too? To which I answer, no: for our knowledge consisting in the perception of the agreement or disagreement of any two ideas, its clearness or obscurity consists in the clearness or obscurity of that perception, and not in the clearness or obscurity of the ideas themselves; v. g. a man that has as clear ideas of the angles of a triangle, and of equality to two right ones, as any mathematician in the world, may yet have but a very obscure perception of their agreement, and so have but a very obscure knowledge of it. But ideas, which by reason of their obscurity or otherwise, are confused, cannot produce any clear or distinct knowledge; because as far as any ideas are confused, so far the mind cannot perceive clearly, whether they agree or disagree. Or to express the same thing in a way less apt to be misunderstood; he that hath not determined ideas to the words he uses, cannot make propositions of them, of whose truth he can be certain.

CHAP.

CHAP. III.

Of the Extent of Human Knowledge.

§. 1. KNOWLEDGE, as has been ſaid, lying in the perception of the agreement or diſagreement of any of our ideas, it follows from hence, that,

1. No farther than we have ideas.

Firſt, we can have knowledge no farther than we have ideas.

2. No farther than we can perceive their agreement or diſagreement.

§. 2. Secondly, that we have no knowledge farther than we can have perception of their agreement or diſagreement. Which perception being, 1. Either by intuition, or the immediate comparing any two ideas; or, 2. By reaſon, examining the agreement or diſagreement of two ideas, by the intervention of ſome others; or, 3. By ſenſation, perceiving the exiſtence of particular things: hence it alſo follows,

3. Intuitive knowledge extends itſelf not to all the relations of all our ideas.

§. 3. Thirdly, that we cannot have an intuitive knowledge, that ſhall extend itſelf to all our ideas, and all that we would know about them; becauſe we cannot examine and perceive all the relations they have one to another by juxta-poſition, or an immediate compariſon one with another. Thus having the ideas of an obtuſe and an acute angled triangle, both drawn from equal baſes, and between parallels, I can, by intuitive knowledge, perceive the one not to be the other, but cannot that way know whether they be equal or no; becauſe their agreement or diſagreement in equality can never be perceived by an immediate comparing them: the difference of figure makes their parts incapable of an exact immediate application; and therefore there is need of ſome intervening qualities to meaſure them by, which is demonſtration, or rational knowledge.

4. Nor demonſtrative knowledge.

§. 4. Fourthly, it follows alſo, from what is above obſerved, that our rational knowledge cannot reach to the whole extent of our ideas: becauſe between two different ideas

ideas we would examine, we cannot always find ſuch mediums, as we can connect one to another with an intuitive knowledge, in all the parts of the deduction; and wherever that fails, we come ſhort of knowledge and demonſtration.

5. Senſitive knowledge narrower than either.

§. 5. Fifthly, ſenſitive knowledge reaching no farther than the exiſtence of things actually preſent to our ſenſes, is yet much narower than either of the former.

6. Our knowledge therefore narrower than our ideas.

§. 6. From all which it is evident, that the extent of our knowledge comes not only ſhort of the reality of things, but even of the extent of our own ideas. Though our knowledge be limited to our ideas, and cannot exceed them either in extent or perfection; and though theſe be very narrow bounds, in reſpect of the extent of all being, and far ſhort of what we may juſtly imagine to be in ſome even created underſtandings, not tied down to the dull and narrow information which is to be received from ſome few, and not very acute ways of perception, ſuch as are our ſenſes; yet it would be well with us if our knowledge were but as large as our ideas, and there were not many doubts and inquiries concerning the ideas we have, whereof we are not, nor I believe ever ſhall be in this world reſolved. Nevertheleſs I do not queſtion but that human knowledge, under the preſent circumſtances of our beings and conſtitutions, may be carried much farther than it has hitherto been, if men would ſincerely, and with freedom of mind, employ all that induſtry and labour of thought, in improving the means of diſcovering truth, which they do for the colouring or ſupport of falſhood, to maintain a ſyſtem, intereſt, or party, they are once engaged in. But yet after all, I think I may, without injury to human perfection, be confident, that our knowledge would never reach to all we might deſire to know concerning thoſe ideas we have; nor be able to ſurmount all the difficulties, and reſolve all the queſtions that might ariſe concerning any of them. We have the ideas of a ſquare, a circle, and equality; and yet, perhaps, ſhall never be able to find a circle equal to a ſquare, and certainly

know that it is ſo. We have the ideas of matter and thinking, * but poſſibly ſhall never be able to know, whether any mere material being thinks, or no; it being im-

* Againſt that aſſertion of Mr. Locke, that poſſibly we ſhall never be able to know whether any mere material being thinks or no, &c. the biſhop of Worceſter argues thus: if this be true, then, for all that we can know by our ideas of matter and thinking, matter may have a power of thinking: and, if this hold, then it is impoſſible to prove a ſpiritual ſubſtance in us from the idea of thinking: for how can we be aſſured by our ideas, that God hath not given ſuch a power of thinking to matter ſo diſpoſed as our bodies are? eſpecially ſince it is ſaid, † "That, in reſpect "of our notions, it is not much more remote from our comprehenſion to "conceive that God can, if he pleaſes, ſuperadd to our idea of matter a "faculty of thinking, than that he ſhould ſuperadd to it another ſub-"ſtance, with a faculty of thinking." Whoever aſſerts this can never prove a ſpiritual ſubſtance in us from a faculty of thinking, becauſe he cannot know, from the idea of matter and thinking, that matter ſo diſpoſed cannot think: and he cannot be certain, that God hath not framed the matter of our bodies ſo as to be capable of it.

To which Mr. Locke ‡ anſwers thus: here your lordſhip argues, that upon my principles it cannot be proved that there is a ſpiritual ſubſtance in us. To which, give me leave, with ſubmiſſion, to ſay, that I think it may be proved from my principles, and I think I have done it; and the proof in my book ſtands thus: Firſt, we experiment in ourſelves thinking. The idea of this action or mode of thinking is inconſiſtent with the idea of ſelf-ſubſiſtence, and therefore has a neceſſary connexion with a ſupport or ſubject of inheſion: the idea of that ſupport is what we call ſubſtance; and ſo from thinking experimented in us, we have a proof of a thinking ſubſtance in us, which in my ſenſe is a ſpirit. Againſt this your lordſhip will argue, that, by what I have ſaid of the poſſibility that God may, if he pleaſes, ſuperadd to matter a faculty of thinking, it can never be proved that there is a ſpiritual ſubſtance in us, becauſe, upon that ſuppoſition, it is poſſible it may be a material ſubſtance that thinks in us. I grant it; but add, that the general idea of ſubſtance being the ſame every where, the modification of thinking, or the power of thinking, joined to it, makes it a ſpirit, without conſidering what other modifications it has, as, whether it has the modification of ſolidity, or no. As, on the other ſide, ſubſtance, that has the modification of ſolidity, is matter, whether it has the modification of thinking, or no. And therefore, if your lordſhip means by a ſpiritual, an immaterial ſubſtance, I grant I have not proved, nor upon my principles can it be proved, (your lordſhip meaning, as I think you do, demonſtratively proved) that there is an immaterial ſubſtance in us that thinks. Though I preſume, from what I have ſaid about this ſuppoſition of a ſyſtem of matter, thinking ‖ (which there demonſtrates that God is immaterial) will prove it in the higheſt degree

† Eſſay of Human Underſtanding. B. 4. C. 3. §. 6.
‡ In his firſt letter to the biſhop of Worceſter.
‖ B. 4. C. 10. §. 16.

probable,

probable, that the thinking ſubſtance in us is immaterial. But your lordſhip thinks not probability enough, and by charging the want of demonſtration upon my principles, that the thinking thing in us is immaterial, your lordſhip ſeems to conclude it demonſtrable from principles of philoſophy. That demonſtration I ſhould with joy receive from your lordſhip, or any one. For though all the great ends of morality and religion are well enough ſecured without it, as I have ſhown *, yet it would be a great advance of our knowledge in nature and philoſophy.

To what I have ſaid in my book, to ſhow that all the great ends of religion and morality are ſecured barely by the immortality of the ſoul, without a neceſſary ſuppoſition that the ſoul is immaterial, I crave leave to add, that immortality may and ſhall be annexed to that, which in its own nature is neither immaterial nor immortal, as the apoſtle expreſly declares in theſe words, † For this corruptible muſt put on incorruption, and this mortal muſt put on immortality,

Perhaps my uſing the word ſpirit for a thinking ſubſtance, without excluding materiality out of it, will be thought too great a liberty, and ſuch as deſerves cenſure, becauſe I leave immateriality out of the idea I make it a ſign of. I readily own, that words ſhould be ſparingly ventured on in a ſenſe wholly new; and nothing but abſolute neceſſity can excuſe the boldneſs of uſing any term in a ſenſe whereof we can produce no example. But, in the preſent caſe, I think I have great authorities to juſtify me. The ſoul is agreed, on all hands, to be that in us which thinks. And he that will look into the firſt book of Cicero's Tuſculan queſtions, and into the ſixth book of Virgil's Æneid, will find, that theſe two great men, who of all the Romans beſt underſtood philoſophy, thought, or at leaſt did not deny the ſoul to be a ſubtile matter, which might come under the name of aura, or ignis, or æther, and this ſoul they both of them called ſpiritus: in the notion of which, it is plain, they included only thought and active motion, without the total excluſion of matter. Whether they thought right in this, I do not ſay; that is not the queſtion; but whether they ſpoke properly, when they called an active, thinking, ſubtile ſubſtance, out of which they excluded only groſs and palpable matter, ſpiritus, ſpirit. I think that nobody will deny, that if any among the Romans can be allowed to ſpeak properly, Tully and Virgil are the two who may moſt ſecurely be depended on for it: and one of them ſpeaking of the ſoul, ſays, Dum ſpiritus hos reget artus; and the other, Vita continetur corpore & ſpiritu. Where it is plain, by corpus, he means (as generally every where) only groſs matter that may be felt and handled, as appears by theſe words, Si cor, aut ſanguis, aut cerebrum eſt animus; certe, quoniam eſt corpus, interibit cum reliquo corpore; ſi anima eſt, fortè diſſipabitur; ſi ignis, extinguetur, Tuſc. Quæſt. l. 1. c. 11. Here Cicero oppoſes corpus to ignis and anima, i. e. aura, or breath. And the foundation of that his diſtinction of the ſoul, from that which he calls corpus or body, he gives a little lower in theſe words, Tanta ejus tenuitas ut fugiat aciem, ib. c. 22. Nor was it the heathen world alone that had this notion of ſpirit; the moſt enlightened of all the ancient people of God, Solomon himſelf, ſpeaks after the ſame manner, ‡ that which befalleth the ſons of men, befalleth beaſts, even one thing befalleth them; as the one dieth, ſo dieth the other, yea, they have all one ſpirit. So I

* B. 4. C. 3. §. 6. † 1 Cor. xv. 53. ‡ Eccl. iii. 19.

translate the Hebrew word רוח here, for so I find it translated the very next verse but one; * who knoweth the spirit of man that goeth upward, and the spirit of the beast that goeth down to the earth? In which places it is plain, that Solomon applies the word רוח, and our translators of him the word spirit, to a substance, out of which materiality was not wholly excluded, unless the spirit of a beast that goeth downwards to the earth be immaterial. Nor did the way of speaking in our Saviour's time vary from this: St. Luke tells us †, that when our Saviour, after his resurrection, stood in the midst of them, they were affrighted, and supposed that they had seen πνεῦμα, the Greek word which always answers spirit in English; and so the translators of the Bible render it here, they supposed that they had seen a spirit. But our Saviour says to them, behold my hands and my feet, that it is I myself; handle me and see; for a spirit hath not flesh and bones, as you see me have. Which words of our Saviour put the same distinction between body and spirit, that Cicero did in the place above-cited, viz. That the one was a gross compages that could be felt and handled; and the other such as Virgil describes the ghost or soul of Anchises.

Ter conatus ibi collo dare brachia circum,
Ter frustra comprensa manus effugit imago,
Par levibus ventis volucrique simillima somno ‡.

I would not be thought hereby to say, that spirit never does signify a purely immaterial substance. In that sense the scripture, I take it, speaks, when it says God is a spirit; and in that sense I have used it; and in that sense I have proved from my principles that there is a spiritual substance; and am certain that there is a spiritual immaterial substance: which is, I humbly conceive, a direct answer to your lordship's question in the beginning of this argument, viz. How we come to be certain that there are spiritual substances, supposing this principle to be true, that the simple ideas by sensation and reflection are the sole matter and foundation of all our reasoning? But this hinders not, but that if God, that infinite, omnipotent, and perfectly immaterial Spirit, should please to give to a system of very subtile matter, sense and motion, it might with propriety of speech be called spirit, though materiality were not excluded out of its complex idea. Your lordship proceeds, It is said indeed elsewhere ‖, that it is repugnant to the idea of senseless matter, that it should put into itself sense, perception, and knowledge. But this doth not reach the present case; which is not what matter can do of itself, but what matter prepared by an omnipotent hand can do. And what certainty can we have that he hath not done it? We can have none from the ideas, for those are given up in this case, and consequently we can have no certainty, upon these principles, whether we have any spiritual substance within us or not.

Your lordship in this paragraph proves, that, from what I say, we can have no certainty whether we have any spiritual substance in us or not. If by spiritual substance your lordship means an immaterial substance in us, as you speak, I grant what your lordship says is true, that it cannot upon these principles be demonstrated. But I must crave leave to say at the same time, that upon these principles it can be proved, to the highest degree of probability. If by spiritual substance your lordship means a thinking substance, I must dissent from your lordship, and say,

* Eccl. iii. 21. † Ch. xxiv. 37. ‡ Lib. VI. ‖ B. 4. C. 10. §. 5.

that

that we can have a certainty, upon my principles, that there is a ſpiritual ſubſtance in us. In ſhort, my lord, upon my principles, i. e. from the idea of thinking, we can have a certainty that there is a thinking ſubſtance in us; from hence we have a certainty that there is an eternal thinking ſubſtance. This thinking ſubſtance, which has been from eternity, I have proved to be immaterial. This eternal, immaterial, thinking ſubſtance, has put into us a thinking ſubſtance, which, whether it be a material or immaterial ſubſtance, cannot be infallibly demonſtrated from our ideas; though from them it may be proved, that it is to the higheſt degree probable that it is immaterial.

Again, the biſhop of Worceſter undertakes to prove from Mr. Locke's principles, that we may be certain, "That the firſt eternal thinking Being, or omnipotent Spirit cannot, if he would, give to certain ſyſtems of created ſenſible matter, put together as he ſees fit, ſome degrees of ſenſe, perception, and thought."

To which Mr. Locke has made the following anſwer in his third letter.

Your firſt argument I take to be this; that according to me, the knowledge we have being by our ideas, and our idea of matter in general being a ſolid ſubſtance, and our idea of body a ſolid extended figured ſubſtance; if I admit matter to be capable of thinking, I confound the idea of matter with the idea of a ſpirit: to which I anſwer, No, no more than I confound the idea of matter with the idea of an horſe, when I ſay that matter in general is a ſolid extended ſubſtance; and that an horſe is a material animal, or an extended ſolid ſubſtance with ſenſe and ſpontaneous motion.

The idea of matter is an extended ſolid ſubſtance; wherever there is ſuch a ſubſtance, there is matter, and the eſſence of matter, whatever other qualities, not contained in that eſſence, it ſhall pleaſe God to ſuperadd to it. For example, God creates an extended ſolid ſubſtance, without the ſuperadding any thing elſe to it, and ſo we may conſider it at reſt: to ſome parts of it he ſuperadds motion, but it has ſtill the eſſence of matter: other parts of it he frames into plants, with all the excellencies of vegetation, life, and beauty, which is to be found in a roſe or peach tree, &c. above the eſſence of matter, in general, but it is ſtill but matter: to other parts he adds ſenſe and ſpontaneous motion, and thoſe other properties that are to be found in an elephant. Hitherto it is not doubted but the power of God may go, and that the properties of a roſe, a peach or an elephant, ſuperadded to matter, change not the properties of matter; but matter is in theſe things matter ſtill. But if one venture to go one ſtep farther and ſay, God may give to matter thought, reaſon, and volition, as well as ſenſe and ſpontaneous motion, there are men ready preſently to limit the power of the omnipotent Creator, and tell us he cannot do it; becauſe it deſtroys the eſſence, or changes the eſſential properties of matter. To make good which aſſertion, they have no more to ſay, but that thought and reaſon are not included in the eſſence of matter. I grant it; but whatever excellency, not contained in its eſſence, be ſuperadded to matter, it does not deſtroy the eſſence of matter, if it leaves it an extended ſolid ſubſtance; wherever that is, there is the eſſence of matter: and if every thing of greater perfection, ſuperadded to ſuch a ſubſtance, deſtroys the eſſence of matter, what will become of the eſſence of matter in a plant or an animal, whoſe properties far exceed thoſe of a mere extended ſolid ſubſtance?

But it is farther urged, that we cannot conceive how matter can think. I grant it; but to argue from thence, that God therefore cannot give to

matter a faculty of thinking, is to say God's omnipotency is limited to a narrow compass, because man's understanding is so; and brings down God's infinite power to the size of our capacities. If God can give no power to any parts of matter, but what men can account for from the essence of matter in general; if all such qualities and properties must destroy the essence, or change the essential properties of matter, which are to our conceptions above it, and we cannot conceive to be the natural consequence of that essence; it is plain, that the essence of matter is destroyed, and its essential properties changed, in most of the sensible parts of this our system. For it is visible, that all the planets have revolutions about certain remote centres, which I would have any one explain, or make conceivable by the bare essence, or natural powers depending on the essence of matter in general, without something added to that essence, which we cannot conceive; for the moving of matter in a crooked line, or the attraction of matter by matter, is all that can be said in the case; either of which it is above our reach to derive from the essence of matter or body in general; though one of these two must unavoidably be allowed to be superadded in this instance to the essence of matter in general. The omnipotent Creator advised not with us in the making of the world, and his ways are not the less excellent, because they are past finding out.

In the next place, the vegetable part of the creation is not doubted to be wholly material; and yet he that will look into it, will observe excellencies and operations in this part of matter, which he will not find contained in the essence of matter in general, nor be able to conceive how they can be produced by it. And will he therefore say, that the essence of matter is destroyed in them, because they have properties and operations not contained in the essential properties of matter as matter, nor explicable by the essence of matter in general?

Let us advance one step farther, and we shall in the animal world meet with yet greater perfections and properties, no ways explicable by the essence of matter in general. If the omnipotent Creator had not superadded to the earth, which produced the irrational animals, qualities far surpassing those of the dull dead earth, out of which they were made, life, sense, and spontaneous motion, nobler qualities than were before in it, it had still remained rude senseless matter; and if to the individuals of each species he had not superadded a power of propagation, the species had perished with those individuals: but by these essences or properties of each species, superadded to the matter which they were made of, the essence or properties of matter in general were not destroyed or changed, any more than any thing that was in the individuals before was destroyed or changed by the power of generation, superadded to them by the first benediction of the Almighty.

In all such cases, the superinducement of greater perfections and nobler qualities destroys nothing of the essence or perfections that were there before; unless there can be showed a manifest repugnancy between them: but all the proof offered for that, is only, that we cannot conceive how matter, without such superadded perfections, can produce such effects; which is, in truth, no more than to say, matter in general, or every part of matter, as matter, has them not; but is no reason to prove, that God, if he pleases, cannot superadd them to some parts of matter, unless it can be proved to be a contradiction, that God should give to some parts of matter qualities and perfections, which matter in general has not; though we cannot conceive how matter is invested with them, or how it operates by

by virtue of thoſe new endowments; nor is it to be wondered that we cannot, whilſt we limit all its operations to thoſe qualities it had before, and would explain them by the known properties of matter in general, without any ſuch induced perfections. For, if this be a right rule of reaſoning, to deny a thing to be, becauſe we cannot conceive the manner how it comes to be; I ſhall deſire them who uſe it to ſtick to this rule, and ſee what work it will make both in divinity as well as philoſophy: and whether they can advance any thing more in favour of ſcepticiſm.

For to keep within the preſent ſubject of the power of thinking and ſelf-motion, beſtowed by omnipotent power in ſome parts of matter: the objection to this is, I cannot conceive how matter ſhould think. What is the conſequence? Ergo, God cannot give it a power to think. Let this ſtand for a good reaſon, and then proceed in other caſes by the ſame. You cannot conceive how matter can attract matter at any diſtance, much leſs at the diſtance of 1,000,000 miles; ergo, God cannot give it ſuch a power: you cannot conceive how matter ſhould feel, or move itſelf, or affect an immaterial being, or be moved by it; ergo, God cannot give it ſuch powers: which is in effect to deny gravity, and the revolution of the planets about the ſun; to make brutes mere machines, without ſenſe or ſpontaneous motion; and to allow man neither ſenſe nor voluntary motion.

Let us apply this rule one degree farther. You cannot conceive how an extended ſolid ſubſtance ſhould think, therefore God cannot make it think: can you conceive how your own ſoul, or any ſubſtance, thinks? You find indeed that you do think, and ſo do I; but I want to be told how the action of thinking is performed: this, I confeſs, is beyond my conception; and I would be glad any one, who conceives it, would explain it to me. God, I find, has given me this faculty; and ſince I cannot but be convinced of his power in this inſtance, which though I every moment experiment in myſelf, yet I cannot conceive the manner of; what would it be leſs than an inſolent abſurdity, to deny his power in other like caſes, only for this reaſon, becauſe I cannot conceive the manner how?

To explain this matter a little farther: God has created a ſubſtance; let it be, for example, a ſolid extended ſubſtance. Is God bound to give it, beſides being, a power of action? that, I think, nobody will ſay: he therefore may leave it in a ſtate of inactivity, and it will be nevertheleſs a ſubſtance; for action is not neceſſary to the being of any ſubſtance that God does create. God has likewiſe created and made to exiſt, de novo, an immaterial ſubſtance, which will not loſe its being of a ſubſtance, though God ſhould beſtow on it nothing more but this bare being, without giving it any activity at all. Here are now two diſtinct ſubſtances, the one material, the other immaterial, both in a ſtate of perfect inactivity. Now I aſk, what power God can give to one of theſe ſubſtances (ſuppoſing them to retain the ſame diſtinct natures that they had as ſubſtances in their ſtate of inactivity) which he cannot give to the other? In that ſtate, it is plain, neither of them thinks; for thinking being an action, it cannot be denied, that God can put an end to any action of any created ſubſtance, without annihilating of the ſubſtance whereof it is an action; and if it be ſo, he can alſo create or give exiſtence to ſuch a ſubſtance, without giving that ſubſtance any action at all. By the ſame reaſon it is plain, that neither of them can move itſelf: now, I would aſk, why Omnipotency cannot give to either of theſe ſubſtances, which are equally in a ſtate of perfect inactivity, the ſame power that it can give to the other? Let it be, for example, that of ſpontaneous or ſelf-motion, which is a power that it

is ſuppoſed God can give to an unſolid ſubſtance, but denied that he can give to ſolid ſubſtance.

If it be aſked, why they limit the omnipotency of God, in reference to the one rather than the other of theſe ſubſtances? all that can be ſaid to it is, that they cannot conceive, how the ſolid ſubſtance ſhould ever be able to move itſelf. And as little, ſay I, are they able to conceive, how a created unſolid ſubſtance ſhould move itſelf. But there may be ſomething in an immaterial ſubſtance, that you do not know. I grant it; and in a material one too: for example, gravitation of matter towards matter, and in the ſeveral proportions obſervable, inevitably ſhows, that there is ſomething in matter that we do not underſtand, unleſs we can conceive ſelf-motion in matter; or an inexplicable and inconceivable attraction in matter, at immenſe, almoſt incomprehenſible diſtances: it muſt therefore be confeſſed, that there is ſomething in ſolid, as well as unſolid ſubſtances, that we do not underſtand. But this we know, that they may each of them have their diſtinct beings, without any activity ſuperadded to them, unleſs you will deny, that God can take from any being its power of acting, which it is probable will be thought too preſumptuous for any one to do; and I ſay, it is as hard to conceive ſelf-motion in a created immaterial, as in a material being, conſider it how you will: and therefore this is no reaſon to deny Omnipotency to be able to give a power of ſelf-motion to a material ſubſtance, if he pleaſes, as well as to an immaterial; ſince neither of them can have it from themſelves, nor can we conceive how it can be in either of them.

The ſame is viſible in the other operation of thinking; both theſe ſubſtances may be made, and exiſt without thought; neither of them has, or can have the power of thinking from itſelf: God may give it to either of them, according to the good pleaſure of his omnipotency; and in which ever of them it is, it is equally beyond our capacity to conceive, how either of theſe ſubſtances thinks. But for that reaſon, to deny that God, who had power enough to give them both a being out of nothing, can by the ſame omnipotency, give them what other powers and perfections he pleaſes, has no better foundation than to deny his power of creation, becauſe we cannot conceive how it is performed: and there, at laſt, this way of reaſoning muſt terminate.

That Omnipotency cannot make a ſubſtance to be ſolid and not ſolid at the ſame time, I think with due reverence we may ſay; but that a ſolid ſubſtance may not have qualities, perfections, and powers, which have no natural or viſibly neceſſary connexion with ſolidity and extenſion, is too much for us (who are but of yeſterday, and know nothing) to be poſitive in. If God cannot join things together by connexions inconceivable to us, we muſt deny even the conſiſtency and being of matter itſelf; ſince every particle of it having ſome bulk, has its parts connected by ways inconceivable to us. So that all the difficulties that are raiſed againſt the thinking of matter, from our ignorance, or narrow conceptions, ſtand not at all in the way of the power of God, if he pleaſes to ordain it ſo; nor prove any thing againſt his having actually endued ſome parcels of matter, ſo diſpoſed as he thinks fit, with a faculty of thinking, till it can be ſhown, that it contains a contradiction to ſuppoſe it.

Though to me ſenſation be comprehended under thinking in general, yet, in the foregoing diſcourſe, I have ſpoke of ſenſe in brutes, as diſtinct from thinking; becauſe your lordſhip, as I remember, ſpeaks of ſenſe in brutes. But here I take liberty to obſerve, that if your lordſhip allows

brutes

brutes to have ſenſation, it will follow, either that God can and doth give to ſome parcels of matter a power of perception and thinking; or that all animals have immaterial, and conſequently, according to your lordſhip, immortal ſouls, as well as men; and to ſay that fleas and mites, &c. have immortal ſouls as well as men, will poſſibly be looked on as going a great way to ſerve an hypotheſis.

I have been pretty large in making this matter plain, that they who are ſo forward to beſtow hard cenſures or names on the opinions of thoſe who differ from them, may conſider whether ſometimes they are not more due to their own; and that they may be perſuaded a little to temper that heat, which, ſuppoſing the truth in their current opinions, gives them (as they think) a right to lay what imputations they pleaſe on thoſe who would fairly examine the grounds they ſtand upon. For talking with a ſuppoſition and inſinuations, that truth and knowledge, nay, and religion too, ſtand and fall with their ſyſtems, is at beſt but an imperious way of begging the queſtion, and aſſuming to themſelves, under the pretence of zeal for the cauſe of God, a title to infallibility. It is very becoming that men's zeal for truth ſhould go as far as their proofs, but not go for proofs themſelves. He that attacks received opinions with any thing but fair arguments, may, I own, be juſtly ſuſpected not to mean well, nor to be led by the love of truth; but the ſame may be ſaid of him too, who ſo defends them. An error is not the better for being common, nor truth the worſe for having lain neglected: and if it were put to the vote any where in the world, I doubt, as things are managed, whether truth would have the majority, at leaſt whilſt the authority of men, and not the examination of things, muſt be its meaſure. The imputation of ſcepticiſm, and thoſe broad inſinuations to render what I have writ ſuſpected, ſo frequent, as if that were the great buſineſs of all this pains you have been at about me, has made me ſay thus much, my lord, rather as my ſenſe of the way to eſtabliſh truth in its full force and beauty, than that I think the world will need to have any thing ſaid to it, to make it diſtinguiſh between your lordſhip's and my deſign in writing, which therefore I ſecurely leave to the judgment of the reader, and return to the argument in hand.

What I have above ſaid, I take to be a full anſwer to all that your lordſhip would infer from my idea of matter, of liberty, of identity, and from the power of abſtracting. You aſk, * How can my idea of liberty agree with the idea that bodies can operate only by motion and impulſe? Anſ. By the omnipotency of God, who can make all things agree, that involve not a contradiction. It is true, I ſay, "† That bodies operate by impulſe, and nothing elſe." And ſo I thought when I writ it, and can yet conceive no other way of their operation. But I am ſince convinced by the judicious Mr. Newton's incomparable book, that it is too bold a preſumption to limit God's power in this point by my narrow conceptions. The gravitation of matter towards matter, by ways unconceivable to me, is not only a demonſtration that God can, if he pleaſes, put into bodies powers, and ways of operation, above what can be derived from our idea of body, or can be explained by what we know of matter, but alſo an unqueſtionable, and every where viſible inſtance, that he has done ſo. And therefore in the next edition of my book, I will take care to have that paſſage rectified.

* 1ſt Anſwer. † Eſſay, B. 2. Ch. 8. §. 11.

As to self-consciousness, your lordship asks, * What is there like self-consciousness in matter? Nothing at all in matter as matter. But that God cannot bestow on some parcels of matter a power of thinking, and with it self-consciousness, will never be proved by asking, † How is it possible to apprehend that mere body should perceive that it doth perceive? The weakness of our apprehension I grant in the case: I confess as much as you please, that we cannot conceive how a solid, no, nor how an unsolid created substance thinks; but this weakness of our apprehensions reaches not the power of God, whose weakness is stronger than any thing in men.

Your argument from abstraction we have in this question, ‡ If it may be in the power of matter to think, how comes it to be so impossible for such organized bodies as the brutes have, to enlarge their ideas by abstraction? Ans. This seems to suppose, that I place thinking within the natural power of matter. If that be your meaning, my lord, I never say, nor suppose, that all matter has naturally in it a faculty of thinking, but the direct contrary. But if you mean that certain parcels of matter, ordered by the Divine power, as seems fit to him, may be made capable of receiving from his omnipotency the faculty of thinking; that, indeed, I say; and that being granted, the answer to your question is easy; since, if Omnipotency can give thought to any solid substance, it is not hard to conceive, that God may give that faculty in a higher or lower degree, as it pleases him, who knows what disposition of the subject is suited to such a particular way or degree of thinking.

Another argument to prove, that God cannot endue any parcel of matter with the faculty of thinking, is taken from those words of mine, ‖ where I show, by what connexion of ideas we may come to know, that God is an immaterial substance. They are these, "The idea of an eternal "actual knowing being, with the idea of immateriality, by the inter-"vention of the idea of matter, and of its actual division, divisibility, "and want of perception," &c. From whence your lordship thus argues, ** Here the want of perception is owned to be so essential to matter, that God is therefore concluded to be immaterial. Answ. Perception and knowledge in that one eternal being, where it has its source, it is visible must be essentially inseparable from it; therefore the actual want of perception in so great part of the particular parcels of matter, is a demonstration, that the first being, from whom perception and knowledge are inseparable, is not matter: how far this makes the want of perception an essential property of matter, I will not dispute; it suffices that it shows, that perception is not an essential property of matter; and therefore matter cannot be that eternal original being to which perception and knowledge are essential. Matter, I say, naturally is without perception: ergo, says your lordship, want of perception is an essential property of matter, and God does not change the essential properties of things, their nature remaining. From whence you infer, that God cannot bestow on any parcel of matter (the nature of matter remaining) a faculty of thinking. If the rules of logic, since my days, be not changed, I may safely deny this consequence. For an argument that runs thus, God does not; ergo, he cannot, I was taught when I first came to the university, would not hold. For I never said God did; but, †† "That I see no contradiction in it,

* 1st Ans. † Ibid. ‡ Ibid. ‖ 1st Letter. ** 1st Ans.
†† B. 4. C. 3. §. 6.

"that

" that he ſhould, if he pleaſed, give to ſome ſyſtems of ſenſeleſs matter a " faculty of thinking;" and I know nobody, before Des Cartes, that ever pretended to ſhow that there was any contradiction in it. So that at worſt, my not being able to ſee in matter any ſuch incapacity, as makes it impoſſible for Omnipotency to beſtow on it a faculty of thinking, makes me oppoſite only to the Carteſians. For, as far as I have ſeen or heard, the fathers of the chriſtian church never pretended to demonſtrate that matter was incapable to receive a power of ſenſation, perception and thinking, from the hand of the omnipotent Creator. Let us therefore, if you pleaſe, ſuppoſe the form of your argumentation right, and that your lordſhip means, God cannot: and then, if your argument be good, it proves, that God could not give to Balaam's aſs a power to ſpeak to his maſter as he did; for the want of rational diſcourſe being natural to that ſpecies, it is but for your lordſhip to call it an eſſential property, and then God cannot change the eſſential properties of things, their nature remaining: whereby it is proved, that God cannot, with all his omnipotency, give to an aſs a power to ſpeak as Balaam's did.

You ſay, * my lord, You do not ſet bounds to God's omnipotency: for he may, if he pleaſe, change a body into an immaterial ſubſtance, i. e. take away from a ſubſtance the ſolidity which it had before, and which made it matter, and then give it a faculty of thinking, which it had not before, and which makes it a ſpirit, the ſame ſubſtance remaining. For if the ſubſtance remains not, body is not changed into an immaterial ſubſtance, but the ſolid ſubſtance, and all belonging to it, is annihilated, and an immaterial ſubſtance created, which is not a change of one thing into another, but the deſtroying of one, and making another de novo. In this change therefore of a body or material ſubſtance into an immaterial, let us obſerve theſe diſtinct conſiderations.

Firſt, you ſay, God may, if he pleaſes, take away from a ſolid ſubſtance ſolidity, which is that which makes it a material ſubſtance or body; and may make it an immaterial ſubſtance, i. e. a ſubſtance without ſolidity. But this privation of one quality gives it not another; the bare taking away a lower or leſs noble quality does not give it an higher or nobler; that muſt be the gift of God. For the bare privation of one, and a meaner quality, cannot be the poſition of an higher and better; unleſs any one will ſay, that cogitation, or the power of thinking, reſults from the nature of ſubſtance itſelf; which if it do, then wherever there is ſubſtance, there muſt be cogitation, or a power of thinking. Here then, upon your lordſhip's own principles, is an immaterial ſubſtance without the faculty of thinking.

In the next place, you will not deny, but God may give to this ſubſtance, thus deprived of ſolidity, a faculty of thinking; for you ſuppoſe it made capable of that, by being made immaterial; whereby you allow, that the ſame numerical ſubſtance may be ſometimes wholly incogitative, or without a power of thinking, and at other times perfectly cogitative, or endued with a power of thinking.

Further, you will not deny, but God can give it ſolidity and make it material again. For, I conclude, it will not be denied, that God can make it again what it was before. Now I crave leave to aſk your lordſhip, why God, having given to this ſubſtance the faculty of thinking after ſolidity was taken from it, cannot reſtore to it ſolidity again, with-

* 1ſt Anſwer.

out

out taking away the faculty of thinking? When you have resolved this, my lord, you will have proved it impossible for God's omnipotence to give a solid substance a faculty of thinking; but till then, not having proved it impossible, and yet denying that God can do it, is to deny that he can do what is in itself possible; which, as I humbly conceive, is visibly to set bounds to God's omnipotency, though you say here * you do not set bounds to God's omnipotency.

If I should imitate your lordship's way of writing, I should not omit to bring in Epicurus here, and take notice that this was his way, Deum verbis ponere, re tollere: and then add, that I am certain you do not think he promoted the great ends of religion and morality. For it is with such candid and kind insinuations as these, that you bring in both † Hobbes and ‡ Spinosa into your discourse here about God's being able, if he please, to give to some parcels of matter, ordered as he thinks fit, a faculty of thinking: neither of those authors having, as appears by any passages you bring out of them, said any thing to this question, nor having, as it seems, any other business here, but by their names skilfully to give that character to my book, with which you would recommend it to the world.

I pretend not to inquire what measure of zeal, nor for what, guides your lordship's pen in such a way of writing, as your's has all along been with me: only I cannot but consider, what reputation it would give to the writings of the fathers of the church, if they should think truth required, or religion allowed them to imitate such patterns. But God be thanked, there be those amongst them who do not admire such ways of managing the cause of truth or religion; they being sensible that if every one, who believes or can pretend he hath truth on his side, is thereby authorized, without proof, to insinuate whatever may serve to prejudice men's minds against the other side, there will be great ravage made on charity and practice, without any gain to truth or knowledge: and that the liberties frequently taken by disputants to do so, may have been the cause that the world in all ages has received so much harm, and so little advantage from controversies in religion.

These are the arguments which your lordship has brought to confute one saying in my book, by other passages in it; which therefore being all but argumenta ad hominem, if they did prove what they do not, are of no other use, than to gain a victory over me: a thing methinks, so much beneath your lordship, that it does not deserve one of your pages. The question is, whether God can, if he pleases, bestow on any parcel of matter, ordered as he thinks fit, a faculty of perception and thinking. You say, ‖ you look upon a mistake herein to be of dangerous consequence, as to the great ends of religion and morality. If this be so, my lord, I think one may well wonder, why your lordship has brought no arguments to establish the truth itself which you look on to be of such dangerous consequence to be mistaken in; but have spent so many pages only in a personal matter, in endeavouring to show, that I had inconsistencies in my book; which if any such thing had been showed, the question would be still as far from being decided, and the danger of mistaking about it as little prevented, as if nothing of all this had been said. If therefore your lordship's care of the great ends of religion and morality have made

* 1st Answer. † Ibid. ‡ Ibid. ‖ Ibid.

you

you think it neceſſary to clear this queſtion, the world has reaſon to conclude there is little to be ſaid againſt that propoſition which is to be found in my book, concerning the poſſibility, that ſome parcels of matter might be ſo ordered by Omnipotence, as to be endued with a faculty of thinking, if God ſo pleaſed; ſince your lordſhip's concern for the promoting the great ends of religion and morality, has not enabled you to produce one argument againſt a propoſition that you think of ſo dangerous conſequence to them.

And here I crave leave to obſerve, that though in your title page you promiſe to prove, that my notion of ideas is inconſiſtent with itſelf, (which if it were, it could hardly be proved to be inconſiſtent with any thing elſe) and with the articles of the chriſtian faith; yet your attempts all along have been to prove me, in ſome paſſages of my book, inconſiſtent with myſelf, without having ſhown any propoſition in my book inconſiſtent with any article of the chriſtian faith.

I think your lordſhip has indeed made uſe of one argument of your own: but it is ſuch an one, that I confeſs I do not ſee how it is apt much to promote religion, eſpecially the chriſtian religion, founded on revelation. I ſhall ſet down your lordſhip's words, that they may be conſidered: you ſay, * that you are of opinion, that the great ends of religion and morality are beſt ſecured by the proofs of the immortality of the ſoul from its nature and properties; and which you think prove it immaterial. Your lordſhip does not queſtion whether God can give immortality to a material ſubſtance; but you ſay it takes off very much from the evidence of immortality, if it depend wholly upon God's giving that, which of its own nature it is not capable of, &c. So likewiſe you ſay, † If a man cannot be certain, but that matter may think, (as I affirm) then what becomes of the ſoul's immateriality (and conſequently immortality) from its operations? But for all this, ſay I, his aſſurance of faith remains on its own baſis. Now you appeal to any man of ſenſe, whether the finding the uncertainty of his own principles, which he went upon, in point of reaſon, doth not weaken the credibility of theſe fundamental articles, when they are conſidered purely as matters of faith? For before, there was a natural credibility in them on account of reaſon; but by going on wrong grounds of certainty, all that is loſt, and inſtead of being certain, he is more doubtful than ever. And if the evidence of faith fall ſo much ſhort of that of reaſon, it muſt needs have leſs effect upon men's minds, when the ſubſerviency of reaſon is taken away; as it muſt be when the grounds of certainty by reaſon are vaniſhed. Is it at all probable, that he who finds his reaſon deceive him in ſuch fundamental points, ſhall have his faith ſtand firm and unmoveable on the account of revelation? For in matters of revelation there muſt be ſome antecedent principles ſuppoſed, before we can believe any thing on the account of it.

More to the ſame purpoſe we have ſome pages farther, where, from ſome of my words your lordſhip ſays, ‡ you cannot but obſerve, that we have no certainty upon my grounds, that ſelf-conſciouſneſs depends upon an individual immaterial ſubſtance, and conſequently that a material ſubſtance may, according to my principles, have ſelf-conſciouſneſs in it; at leaſt, that I am not certain of the contrary. Whereupon your lordſhip bids me conſider, whether this doth not a little affect the whole article of the reſurrection. What does all this tend to, but to make the world

* 1ſt Anſwer. † 2d Anſwer. ‡ Ibid.

believe

believe that I have leſſened the credibility of the immortality of the ſoul, and the reſurrection, by ſaying, that though it be moſt highly probable, that the ſoul is immaterial, yet upon my principles it cannot be demonſtrated; becauſe it is not impoſſible to God's omnipotency, if he pleaſes, to beſtow upon ſome parcels of matter, diſpoſed as he ſees fit, a faculty of thinking?

This your accuſation of my leſſening the credibility of theſe articles of faith, is founded on this, that the article of the immortality of the ſoul abates of its credibility, if it be allowed, that its immateriality (which is the ſuppoſed proof from reaſon and philoſophy of its immortality) cannot be demonſtrated from natural reaſon: which argument of your lordſhip's, bottoms, as I humbly conceive, on this, that divine revelation abates of its credibility in all thoſe articles it propoſes, proportionably as human reaſon fails to ſupport the teſtimony of God. And all that your lordſhip in thoſe paſſages has ſaid, when examined, will, I ſuppoſe, be found to import thus much, viz. Does God propoſe any thing to mankind to be believed? It is very fit and credible to be believed, if reaſon can demonſtrate it to be true. But if human reaſon come ſhort in the caſe, and cannot make it out, its credibility is thereby leſſened; which is in effect to ſay, that the veracity of God is not a firm and ſure foundation of faith to rely upon, without the concurrent teſtimony of reaſon; i. e. with reverence be it ſpoken, God is not to be believed on his own word, unleſs what he reveals be in itſelf credible, and might be believed without him.

If this be a way to promote religion, the chriſtian religion, in all its articles, I am not ſorry that it is not a way to be found in any of my writings; for I imagine any thing like this would (and I ſhould think deſerved to) have other titles than bare ſcepticiſm beſtowed upon it, and would have raiſed no ſmall outcry againſt any one, who is not to be ſuppoſed to be in the right in all that he ſays, and ſo may ſecurely ſay what he pleaſes. Such as I, the profanum vulgus, who take too much upon us, if we would examine, have nothing to do but to hearken and believe, though what he ſaid ſhould ſubvert the very foundations of the chriſtian faith.

What I have above obſerved, is ſo viſibly contained in your lordſhip's argument, that when I met with it in your anſwer to my firſt letter, it ſeemed ſo ſtrange for a man of your lordſhip's character, and in a diſpute in defence of the doctrine of the Trinity, that I could hardly perſuade myſelf, but it was a ſlip of your pen: but when I found it in your ſecond letter * made uſe of again, and ſeriouſly enlarged as an argument of weight to be inſiſted upon, I was convinced, that it was a principle that you heartily embraced, how little favourable ſoever it was to the articles of the chriſtian religion, and particularly thoſe which you undertook to defend.

I deſire my reader to peruſe the paſſages as they ſtand in your letters themſelves, and ſee whether what you ſay in them does not amount to this: that a revelation from God is more or leſs credible, according as it has a ſtronger or weaker confirmation from human reaſon. For,

1. Your lordſhip ſays, † you do not queſtion whether God can give immortality to a material ſubſtance; but you ſay it takes off very much from the evidence of immortality, if it depends wholly upon God's giving that, which of its own nature it is not capable of.

* 2d Anſwer. † 1ſt Anſwer.

To

To which I reply, any one's not being able to demonſtrate the ſoul to be immaterial, takes off not very much, nor at all, from the evidence of its immortality, if God has revealed that it ſhall be immortal; becauſe the veracity of God is a demonſtration of the truth of what he has revealed, and the want of another demonſtration of a propoſition, that is demonſtratively true, takes not off from the evidence of it. For where there is a clear demonſtration, there is as much evidence as any truth can have, that is not ſelf-evident. God has revealed that the ſouls of men ſhould live for ever. But, ſays your lordſhip, from this evidence it takes off very much, if it depends wholly upon God's giving that, which of its own nature it is not capable of, i. e. The revelation and teſtimony of God loſes much of its evidence, if this depends wholly upon the good pleaſure of God, and cannot be demonſtratively made out by natural reaſon, that the ſoul is immaterial, and conſequently in its own nature immortal. For that is all that here is or can be meant by theſe words, which of its own nature it is not capable of, to make them to the purpoſe. For the whole of your lordſhip's diſcourſe here, is to prove, that the ſoul cannot be material, becauſe then the evidence of its being immortal would be very much leſſened. Which is to ſay, that it is not as credible upon divine revelation, that a material ſubſtance ſhould be immortal, as an immaterial; or which is all one, that God is not equally to be believed, when he declares, that a material ſubſtance ſhall be immortal, as when he declares, that an immaterial ſhall be ſo; becauſe the immortality of a material ſubſtance cannot be demonſtrated from natural reaſon.

Let us try this rule of your lordſhip's a little farther. God hath revealed, that the bodies men ſhall have after the reſurrection, as well as their ſouls, ſhall live to eternity. Does your lordſhip believe the eternal life of the one of theſe more than of the other, becauſe you think you can prove it of one of them by natural reaſon, and of the other not? Or can any one, who admits of divine revelation in the caſe, doubt of one of them more than the other? Or think this propoſition leſs credible, that the bodies of men, after the reſurrection, ſhall live for ever; than this, That the ſouls of men ſhall, after the reſurrection, live for ever? For that he muſt do, if he thinks either of them is leſs credible than the other. If this be ſo, reaſon is to be conſulted how far God is to be believed, and the credit of divine teſtimony muſt receive its force from the evidence of reaſon; which is evidently to take away the credibility of divine revelation in all ſupernatural truths, wherein the evidence of reaſon fails. And how much ſuch a principle as this tends to the ſupport of the doctrine of the Trinity, or the promoting the chriſtian religion, I ſhall leave it to your lordſhip to conſider.

I am not ſo well read in Hobbes or Spinoſa, as to be able to ſay, what were their opinions in this matter. But poſſibly there be thoſe, who will think your lordſhip's authority of more uſe to them in the caſe, than thoſe juſtly decried names; and be glad to find your lordſhip a patron of the oracles of reaſon, ſo little to the advantage of the oracles of divine revelation. This at leaſt, I think, may be ſubjoined to the words at the bottom of the next page*, That thoſe who have gone about to leſſen the credibility of the articles of faith, which evidently they do, who ſay they are leſs credible, becauſe they cannot be made out demonſtratively by natural reaſon, have not been thought to ſecure ſeveral of the articles

* 1ſt Anſwer.

of

of the christian faith, especially those of the trinity, incarnation, and resurrection of the body, which are those upon the account of which I am brought by your lordship into this dispute.

I shall not trouble the reader with your lordship's endeavours, in the following words, to prove, that if the soul be not an immaterial substance, it can be nothing but life; your very first words visibly confuting all that you alledge to that purpose, they are, * If the soul be a material substance, it is really nothing but life; which is to say, That if the soul be really a substance, it is not really a substance, but really nothing else but an affection of a substance; for the life, whether of a material or immaterial substance, is not the substance itself, but an affection of it.

2. You say, † Although we think the separate state of the soul after death, is sufficiently revealed in the scripture; yet it creates a great difficulty in understanding it, if the soul be nothing but life, or a material substance, which must be dissolved when life is ended. For, if the soul be a material substance, it must be made up, as others are, of the cohesion of solid and separate parts, how minute and invisible soever they be. And what is it which should keep them together, when life is gone? So that it is no easy matter to give an account how the soul should be capable of immortality, unless it be an immaterial substance; and then we know the solution and texture of bodies cannot reach the soul, being of a different nature.

Let it be as hard a matter as it will, to give an account what it is that should keep the parts of a material soul together, after it is separated from the body; yet it will be always as easy to give an account of it, as to give an account what it is which shall keep together a material and immaterial substance. And yet the difficulty that there is to give an account of that, I hope, does not, with your lordship, weaken the credibility of the inseparable union of soul and body to eternity: and I persuade myself, that the men of sense, to whom your lordship appeals in the case, do not find their belief of this fundamental point much weakened by that difficulty. I thought heretofore (and by your lordship's permission would think so still) that the union of the parts of matter, one with another, is as much in the hands of God, as the union of a material and immaterial substance; and that it does not take off very much, or at all, from the evidence of immortality, which depends on that union, that it is no easy matter to give an account what it is that should keep them together: though its depending wholly upon the gift and good pleasure of God, where the manner creates great difficulty in the understanding, and our reason cannot discover in the nature of things how it is, be that which, your lordship so positively says, lessens the credibility of the fundamental articles of the resurrection and immortality.

But, my lord, to remove this objection a little, and to show of how small force it is even with yourself; give me leave to presume, that your lordship as firmly believes the immortality of the body after the resurrection, as any other article of faith; if so, then it being no easy matter to give an account what it is that shall keep together the parts of a material soul, to one that believes it is material, can no more weaken the credibility of its immortality, than the like difficulty weakens the credibility of the immortality of the body. For, when your lordship shall find it an easy matter to give an account what it is, besides the good pleasure of

* 1st Answer. † Ibid.

God,

God, which ſhall keep together the parts of our material bodies to eternity, or even ſoul and body, I doubt not but any one who ſhall think the ſoul material, will alſo find it as eaſy to give an account what it is that ſhall keep thoſe parts of matter alſo together to eternity.

Were it not that the warmth of controverſy is apt to make men ſo far forget, as to take up thoſe principles themſelves (when they will ſerve their turn) which they have highly condemned in others, I ſhould wonder to find your lordſhip to argue, that becauſe it is a difficulty to underſtand what ſhall keep together the minute parts of a material ſoul, when life is gone; and becauſe it is not an eaſy matter to give an account how the ſoul ſhall be capable of immortality, unleſs it be an immaterial ſubſtance: therefore it is not ſo credible, as if it were eaſy to give an account by natural reaſon, how it could be. For to this it is that all this your diſcourſe tends, as is evident by what is already ſet down; and will be more fully made out by what your lordſhip ſays in other places, though there needs no ſuch proof, ſince it would all be nothing againſt me in any other ſenſe.

I thought your lordſhip had in other places aſſerted, and inſiſted on this truth, that no part of divine revelation was the leſs to be believed, becauſe the thing itſelf created great difficulty in the underſtanding, and the manner of it was hard to be explained, and it was no eaſy matter to give an account how it was. This, as I take it, your lordſhip condemned in others as a very unreaſonable principle, and ſuch as would ſubvert all the articles of the chriſtian religion, that were mere matters of faith, as I think it will: and is it poſſible, that you ſhould make uſe of it here yourſelf, againſt the article of life and immortality, that Chriſt hath brought to light through the goſpel, and neither was, nor could be made out by natural reaſon without revelation? But you will ſay, you ſpeak only of the ſoul; and your words are, 'That it is no eaſy matter to give an account how the ſoul ſhould be capable of immortality, unleſs it be an immaterial ſubſtance. I grant it; but crave leave to ſay, that there is not any one of thoſe difficulties, that are or can be raiſed about the manner how a material ſoul can be immortal, which do not as well reach the immortality of the body.

But, if it were not ſo, I am ſure this principle of your lordſhip's would reach other articles of faith, wherein our natural reaſon finds it not ſo eaſy to give an account how thoſe myſteries are; and which therefore, according to your principles, muſt be leſs credible than other articles, that create leſs difficulty to the underſtanding. For your lordſhip ſays, * that you appeal to any man of ſenſe, whether to a man, who thought by his principles he could from natural grounds demonſtrate the immortality of the ſoul, the finding the uncertainty of thoſe principles he went upon in point of reaſon, i. e. the finding he could not certainly prove it by natural reaſon, doth not weaken the credibility of that fundamental article, when it is conſidered purely as a matter of faith? which, in effect, I humbly conceive, amounts to this, that a propoſition divinely revealed, that cannot be proved by natural reaſon, is leſs credible than one that can: which ſeems to me to come very little ſhort of this, with due reverence be it ſpoken, that God is leſs to be believed when he affirms a propoſition that cannot be proved by natural reaſon, than when he propoſes what can be proved by it. The direct contrary to which is my opinion,

* 2d Anſwer.

though

though you endeavour to make it good by these following words; * If the evidence of faith fall so much short of that of reason it must needs have less effect upon men's minds, when the subserviency of reason is taken away; as it must be when the grounds of certainty by reason are vanished. Is it at all probable, that he who finds his reason deceive him in such fundamental points, should have his faith stand firm and unmoveable on the account of revelation? Than which I think there are hardly plainer words to be found out to declare, that the credibility of God's testimony depends on the natural evidence of probability of the things we receive from revelation, and rises and falls with it; and that the truths of God, or the articles of mere faith, lose so much of their credibility, as they want proof from reason: which if true, revelation may come to have no credibility at all. For if, in this present case, the credibility of this proposition, the souls of men shall live for ever, revealed in the scripture, be lessened by confessing it cannot be demonstratively proved from reason; though it be asserted to be most highly probable: must not, by the same rule, its credibility dwindle away to nothing, if natural reason should not be able to make it out to be so much as probable, or should place the probability from natural principles on the other side? For, if mere want of demonstration lessens the credibility of any proposition divinely revealed, must not want of probability, or contrary probability from natural reason, quite take away its credibility? Here at last it must end, if in any one case the veracity of God, and the credibility of the truths we receive from him by revelation, be subjected to the verdicts of human reason, and be allowed to receive any accession or diminution from other proofs, or want of other proofs of its certainty or probability.

If this be your lordship's way to promote religion, or defend its articles, I know not what argument the greatest enemies of it could use more effectual for the subversion of those you have undertaken to defend; this being to resolve all revelation perfectly and purely into natural reason, to bound its credibility by that, and leave no room for faith in other things, than what can be accounted for by natural reason without revelation.

Your lordship † insists much upon it, as if I had contradicted what I have said in my essay, by saying ‡ that upon my principles it cannot be demonstratively proved, that it is an immaterial substance in us that thinks, however probable it be. He that will be at the pains to read that chapter of mine, and consider it, will find, that my business there was to show, that it was no harder to conceive an immaterial than a material substance; and that from the ideas of thought, and a power of moving of matter, which we experienced in ourselves, (ideas originally not belonging to matter as matter) there was no more difficulty to conclude there was an immaterial substance in us, than that we had material parts. These ideas of thinking, and power of moving of matter, I in another place showed, did demonstratively lead us to the certain knowledge of the existence of an immaterial thinking being, in whom we have the idea of spirit in the strictest sense; in which sense I also applied it to the soul, in the 23d ch. of my essay; the easily conceivable possibility, nay great probability, that the thinking substance in us is immaterial, giving me sufficient ground for it: in which sense I shall think I may safely attribute it to the thinking substance in us, till your lordship shall have better proved from my words, that it is impossible it should be immaterial. For I only say, that

* 2d Answer. † 1st Answer. ‡ B. 2. C. 23.

it is poſſible, i. e. involves no contradiction, that God, the omnipotent immaterial ſpirit, ſhould, if he pleaſes, give to ſome parcels of matter, diſpoſed as he thinks fit, a power of thinking and moving; which parcels of matter, ſo endued with a power of thinking and motion, might properly be called ſpirits, in contradiſtinction to unthinking matter. In all which, I preſume, there is no manner of contradiction.

I juſtified my uſe of the word ſpirit, in that ſenſe, from the authorities of Cicero and Virgil, applying the Latin word ſpiritus, from whence ſpirit is derived, to the ſoul as a thinking thing, without excluding materiality out of it. To which your lordſhip replies, * That Cicero, in his Tuſculan Queſtions, ſuppoſes the ſoul not to be a finer ſort of body, but of a different nature from the body——That he calls the body the priſon of the ſoul.——And ſays, that a wiſe man's buſineſs is to draw off his ſoul from his body. And then your lordſhip concludes, as is uſual, with a queſtion, Is it poſſible now to think ſo great a man looked on the ſoul but as a modification of the body, which muſt be at an end with life? Anſ. No; it is impoſſible that a man of ſo good ſenſe as Tully, when he uſes the word corpus or body for the groſs and viſible parts of a man, which he acknowledges to be mortal, ſhould look on the ſoul to be a modification of that body; in a diſcourſe wherein he was endeavouring to perſuade another, that it was immortal. It is to be acknowledged that truly great men, ſuch as he was, are not wont ſo manifeſtly to contradict themſelves. He had therefore no thought concerning the modification of the body of a man in the caſe: he was not ſuch a trifler as to examine, whether the modification of the body of a man was immortal, when that body itſelf was mortal: and therefore, that which he reports as Dicæarchus's opinion, he diſmiſſes in the beginning without any more ado, c. 11. But Cicero's was a direct, plain, and ſenſible inquiry, viz. What the ſoul was? to ſee whether from thence he could diſcover its immortality. But in all that diſcourſe in his firſt book of Tuſculan Queſtions, where he lays out ſo much of his reading and reaſon, there is not one ſyllable ſhowing the leaſt thought that the ſoul was an immaterial ſubſtance; but many things directly to the contrary.

Indeed (1) he ſhuts out the body, taken in the ſenſes he uſes † corpus all along, for the ſenſible organical parts of a man; and is poſitive that is not the ſoul: and body in this ſenſe, taken for the human body, he calls the priſon of the ſoul: and ſays a wiſe man, inſtancing in Socrates and Cato, is glad of a fair opportunity to get out of it. But he no where ſays any ſuch thing of matter: he calls not matter in general the priſon of the ſoul, nor talks a word of being ſeparate from it.

2. He concludes, that the ſoul is not, like other things here below, made up of a compoſition of the elements, ch. 27.

3. He excludes the two groſs elements, earth and water, from being the ſoul, ch. 26.

So far he is clear and poſitive: but beyond this he is uncertain; beyond this he could not get: for in ſome places he ſpeaks doubtfully, whether the ſoul be not air or fire. Anima ſit animus, igniſve, neſcio, c. 25. And therefore he agrees with Panætius, that, if it be at all elementary, it is, as he calls it, inflammata anima, inflamed air; and for this he gives ſeveral reaſons, c. 18, 19. And though he thinks it to be of a peculiar nature

* 1ſt Anſwer. † Ch. 19, 22, 30, 31, &c.

of its own, yet he is so far from thinking it immaterial, that he says, c. 19. that the admitting it to be of an aerial or ingneous nature, will not be inconsistent with any thing he had said.

That which he seems most to incline to is, that the soul was not at all elementary, but was of the same substance with the heavens; which Aristotle, to distinguish from the four elements, and the changeable bodies here below, which he supposed made up of them, called quinta essentia. That this was Tully's opinion is plain from these words, Ergo animus (qui, ut ego dico, divinus) est, ut Euripides audet dicere, Deus; & quidem, si Deus aut anima aut ignis est, idem est animus hominis. Nam ut illa natura cœlestis et terrâ vacat & humore; sic utriusque harum rerum humanus animus est expers. Sin autem est quinta quædam natura ab Aristotele inducta; primum hæc & deorum est & animorum. Hanc nos sententiam secuti, his ipsis verbis in consolatione hæc expressimus, ch. 29. And then he goes on, c. 27. to repeat those his own words, which your lordship has quoted out of him, wherein he had affirmed, in his treatise De Consolatione, the soul not to have its original from the earth, or to be mixed or made of any thing earthly; but had said, singularis est igitur quædam natura & vis animi, sejuncta ab his usitatis notisque naturis: whereby he tells us, he meant nothing but Aristotle's quinta essentia: which being unmixed, being that of which the gods and souls consisted, he calls it divinum cœleste, and concludes it eternal; it being, as he speaks, sejuncta ab omni mortali concretione. From which it is clear, that in all his inquiry about the substance of the soul, his thoughts went not beyond the four elements, or Aristotle's quinta essentia, to look for it. In all which there is nothing of immateriality, but quite the contrary.

He was willing to believe (as good and wise men have always been) that the soul was immortal; but for that, it is plain, he never thought of its immateriality, but as the eastern people do, who believe the soul to be immortal, but have nevertheless no thought, no conception of its immateriality. It is remarkable what a very considerable and judicious author says * in the case. No opinion, says he, has been so universally received as that of the immortality of the soul; but its immateriality is a truth, the knowledge whereof has not spread so far. And indeed it is extremely difficult to let into the mind of a Siamite the idea of a pure spirit. This the missionaries who have been longest among them, are positive in. All the pagans of the east do truly believe, that there remains something of a man after his death, which subsists independently and separately from his body. But they give extension and figure to that which remains, and attribute to it all the same members, all the same substances, both solid and liquid, which our bodies are composed of. They only suppose that the souls are of a matter subtile enough to escape being seen or handled.—Such were the shades and manes of the Greeks and the Romans. And it is by these figures of the souls, answerable to those of the bodies, that Virgil supposed Æneas knew Palinurus, Dido, and Anchises, in the other world.

This gentleman was not a man that travelled into those parts for his pleasure, and to have the opportunity to tell strange stories, collected by chance, when he returned: but one chosen on purpose (and he seems well chosen for the purpose) to inquire into the singularities of Siam. And he has so well acquitted himself of the commission, which his epistle dedica-

* Loubere du Royaume de Siam, T. 1. c. 19. §. 4.

tory

tory tells us he had, to inform himſelf exactly of what was moſt remarkable there, that had we but ſuch an account of other countries of the eaſt, as he has given us of this kingdom, which he was an envoy to, we ſhould be much better acquainted than we are, with the manners, notions, and religions of that part of the world inhabited by civilized nations, who want neither good ſenſe nor acuteneſs of reaſon, though not caſt into the mould of the logick and philoſophy of our ſchools.

But to return to Cicero: it is plain, that in his inquiries about the ſoul, his thoughts went not at all beyond matter. This the expreſſions that drop from him in ſeveral places of this book evidently ſhow. For example, that the ſouls of excellent men and women aſcended into heaven; of others, that they remained here on earth, c. 12. That the ſoul is hot, and warms the body: that, at its leaving the body, it penetrates, and divides, and breaks through our thick, cloudy, moiſt air: that it ſtops in the region of fire, and aſcends no farther, the equality of warmth and weight making that its proper place, where it is nouriſhed and ſuſtained, with the ſame things wherewith the ſtars are nouriſhed and ſuſtained, and that by the convenience of its neighbourhood it ſhall there have a clearer view and fuller knowledge of the heavenly bodies, c. 19. That the ſoul alſo from this height ſhall have a pleaſant and fairer proſpect of the globe of the earth, the diſpoſition of whoſe parts will then lie before it in one view, c. 20. That it is hard to determine what conformation, ſize, and place, the ſoul has in the body: that it is too ſubtile to be ſeen: that it is in the human body as in a houſe, or a veſſel, or a receptacle, c. 22. All which are expreſſions that ſufficiently evidence, that he who uſed them had not in his mind ſeparated materiality from the idea of the ſoul.

It may perhaps be replied, that a great part of this which we find in chap. 19. is ſaid upon the principles of thoſe who would have the ſoul to be anima inflammata, inflamed air. I grant it. But it is alſo to be obſerved, that in this 19th, and the two following chapters, he does not only not deny, but even admits, that ſo material a thing as inflamed air may think.

The truth of the caſe in ſhort is this: Cicero was willing to believe the ſoul immortal; but, when he ſought in the nature of the ſoul itſelf ſomething to eſtabliſh this his belief into a certainty of it, he found himſelf at a loſs. He confeſſed he knew not what the ſoul was; but the not knowing what it was, he argues, c. 22. was no reaſon to conclude it was not. And thereupon he proceeds to the repetition of what he had ſaid in his 6th book, De Repub. concerning the ſoul. The argument, which, borrowed from Plato, he there makes uſe of, if it have any force in it, not only proves the ſoul to be immortal, but more than, I think, your lordſhip will allow to be true: for it proves it to be eternal, and without beginning, as well as without end: Neque nata certe eſt, & æterna eſt, ſays he.

Indeed from the faculties of the ſoul he concludes right, that it is of divine original: but as to the ſubſtance of the ſoul, he at the end of this diſcourſe concerning its faculties, c. 25. as well as at this beginning of it, c. 22. is not aſhamed to own his ignorance of what it is; Anima ſit animus, igniſve, neſcio; nec me pudet, ut iſtos, fateri neſcire quod neſciam. Illud ſi ulla alia de re obſcura affirmare poſſem, ſive anima, ſive ignis ſit animus, eum jurarem eſſe divinum, c. 25. So that all the certainty he could attain to about the ſoul, was, that he was confident there

was something divine in it, i. e. there were faculties in the soul that could not result from the nature of matter, but must have their original from a divine power; but yet those qualities, as divine as they were, he acknowledged might be placed in breath or fire, which, I think, your lordship will not deny to be material substances. So that all those divine qualities, which he so much and so justly extols in the soul, led him not, as appears, so much as to any the least thought of immateriality. This is demonstration, that he built them not upon an exclusion of materiality out of the soul; for he avowedly professes he does not know, but breath or fire might be this thinking thing in us: and in all his considerations about the substance of the soul itself, he stuck in air, or fire, or Aristotle's quinta essentia; for beyond those it is evident he went not.

But with all his proofs out of Plato, to whose authority he defers so much, with all the arguments his vast reading and great parts could furnish him with for the immortality of the soul, he was so little satisfied, so far from being certain, so far from any thought that he had, or could prove it, that he over and over again professes his ignorance and doubt of it, In the beginning he enumerates the several opinions of the philosophers, which he had well studied, about it: and then, full of uncertainty, says, Harum sententiarum quæ vera sit, Deus aliquis viderit; quæ verisimillima, magna quæstio, c. 11. And towards the latter end, having gone them all over again, and one after another examined them, he professes himself still at a loss, not knowing on which to pitch, nor what to determine. Mentis acies, says he, seipsam intuens, nonnunquam hebescit, ob eamque causam contemplandi diligentiam amittimus. Itaque dubitans, circumspectans, hæsitans, multa adversa revertens, tanquam in rate in mari immenso, nostra vehitur oratio, c. 30. And to conclude this argument, when the person he introduces as discoursing with him, tells him he is resolved to keep firm to the belief of immortality; Tully answers, c. 32. Laudo id quidem, etsi nihil animis oportet considere: movemur enim sæpe aliquo acute concluso; labamus, mutamusque sententiam clarioribus etiam in rebus; in his est enim aliqua obscuritas.

So unmoveable is that truth delivered by the spirit of truth, that though the light of nature gave some obscure glimmering, some uncertain hopes of a future state; yet human reason could attain to no clearness, no certainty about it, but that it was JESUS CHRIST alone, who had brought life and immortality to light through the gospel *. Though we are now told, that to own the inability of natural reason to bring immortality to light, or, which passes for the same, to own principles upon which the immateriality of the soul (and, as it is urged, consequently its immortality) cannot be demonstratively proved, does lessen the belief of this article of revelation, which JESUS CHRIST alone has brought to light, and which consequently the scripture assures us is established and made certain only by revelation. This would not perhaps have seemed strange, from those who are justly complained of for slighting the revelation of the gospel, and therefore would not be much regarded, if they should contradict so plain a text of scripture, in favour of their all-sufficient reason: but what use the promoters of scepticism and infidelity, in an age so much suspected by your lordship, may make of what comes from one of your great authority and learning, may deserve your consideration.

* 2 Tim. i. 10.

And

And thus, my lord, I hope, I have satisfied you concerning Cicero's opinion about the soul, in his first book of Tusculan questions; which, though I easily believe, as your lordship says, you are no stranger to, yet I humbly conceive you have not shown (and, upon a careful perusal of that treatise again, I think I may boldly say you cannot show) one word in it, that expresses any thing like a notion in Tully of the soul's immateriality, or its being an immaterial substance.

From what you bring out of Virgil, your lordship concludes, * That he, no more than Cicero, does me any kindness in this matter, being both assertors of the soul's immortality. My lord, were not the question of the soul's immateriality, according to custom, changed here into that of its immortality, which I am no less an assertor of than either of them, Cicero and Virgil do me all the kindness I desired of them in this matter; and that was to show, that they attributed the word spiritus to the soul of man, without any thought of its immateriality; and this the verses you yourself bring out of Virgil †,

Et cum frigida mors animâ seduxerit artus,
Omnibus umbra locis adero; dabis, improbe, pœnas;

confirm, as well as those I quoted out of his 6th book: and for this monsieur de la Loubere shall be my witness in the words above set down out of him; where he shows, that there be those amongst the heathens of our days, as well as Virgil and others amongst the antient Greeks and Romans, who thought the souls or ghosts of men departed did not die with the body, without thinking them to be perfectly immaterial; the latter being much more incomprehensible to them than the former. And what Virgil's notion of the soul is, and that corpus, when put in contradistinction to the soul, signifies nothing but the gross tenement of flesh and bones, is evident from this verse of his Æneid 6. where he calls the souls which yet were visible,

————Tenues sine corpore vitas.

Your lordship's ‡ answer concerning what is said Eccles. xii. turns wholly upon Solomon's taking the soul to be immortal, which was not what I questioned: all that I quoted that place for, was to show, that spirit in English might properly be applied to the soul, without any notion of its immateriality, as רוח was by Solomon, which, whether he thought the souls of men to be immaterial, does little appear in that passage, where he speaks of the souls of men and beasts together, as he does. But farther, what I contended for is evident from that place, in that the word spirit is there applied by our translators, to the souls of beasts, which your lordship, I think, does not rank amongst the immaterial, and consequently immortal spirits, though they have sense and spontaneous motion.

But you say, ‖ If the soul be not of itself a free thinking substance, you do not see what foundation there is in nature for a day of judgment. Ans. Though the heathen world did not of old, nor do to this day, see a foundation in nature for a day of judgment; yet in revelation, if that will satisfy your lordship, every one may see a foundation for a day of judgment, because God has positively declared it; though God has not by that revelation taught us, what the substance of the soul is; nor has any where said, that the soul of itself is a free agent. Whatsoever any created substance is, it is not of itself, but is by the good pleasure of its

* 1st Answer. † Æneid. 4. 385. ‡ 1st Answer. ‖ Ibid.

Creator: whatever degrees of perfection it has, it has from the bountiful hand of its maker. For it is true in a natural, as well as a ſpiritual ſenſe, what St. Paul ſays, * Not that we are ſufficient of ourſelves to think any thing as of ourſelves, but our ſufficiency is of God.

But your lordſhip, as I gueſs by your following words, would argue, that a material ſubſtance cannot be a free agent; whereby I ſuppoſe you only mean, that you cannot ſee or conceive how a ſolid ſubſtance ſhould begin, ſtop, or change its own motion. To which give me leave to anſwer, that when you can make it conceivable, how any created, finite, dependant ſubſtance can move itſelf, or alter or ſtop its own motion, which it muſt to be a free agent; I ſuppoſe you will find it no harder for God to beſtow this power on a ſolid than an unſolid created ſubſtance. Tully, in the place above quoted, † could not conceive this power to be in any thing but what was from eternity; Cum pateat igitur æternum id eſſe quod ſeipſum moveat, quis eſt qui hanc naturam animis eſſe tributam neget? But though you cannot ſee how any created ſubſtance, ſolid or not ſolid, can be a free agent, (pardon me, my lord, if I put in both, till your lordſhip pleaſe to explain it of either, and ſhow the manner how either of them can, of itſelf, move itſelf or any thing elſe) yet I do not think you will ſo far deny men to be free agents, from the difficulty there is to ſee how they are free agents, as to doubt whether there be foundation enough for a day of judgment.

It is not for me to judge how far your lordſhip's ſpeculations reach: but finding in myſelf nothing to be truer than what the wiſe Solomon tells me, ‡ As thou knoweſt not what is the way of the ſpirit, nor how the bones do grow in the womb of her that is with child; even ſo thou knoweſt not the works of God, who maketh all things; I gratefully receive and rejoice in the light of revelation, which ſets me at reſt in many things, the manner whereof my poor reaſon can by no means make out to me: Omnipotency, I know, can do any thing that contains in it no contradiction; ſo that I readily believe whatever God has declared, though my reaſon find difficulties in it, which it cannot maſter. As in the preſent caſe, God having revealed that there ſhall be a day of judgment, I think that foundation enough to conclude men are free enough to be made anſwerable for their actions, and to receive according to what they have done; though how man is a free agent, ſurpaſs my explication or comprehenſion.

In anſwer to the place I brought out of St. Luke ‖, your lordſhip aſks, ** Whether from theſe words of our Saviour it follows, that a ſpirit is only an appearance? I anſwer, No; nor do I know who drew ſuch an inference from them: but it follows, that in apparitions there is ſomething that appears, and that which appears is not wholly immaterial; and yet this was properly called πνεῦμα, and was often looked upon, by thoſe who called it πνεῦμα in Greek, and now call it ſpirit in Engliſh, to be the ghoſt or ſoul of one departed; which I humbly conceive juſtifies my uſe of the word ſpirit, for a thinking voluntary agent, whether material or immaterial.

Your lordſhip ſays, †† That I grant, that it cannot upon theſe principles be demonſtrated, that the ſpiritual ſubſtance in us is immaterial; from whence you conclude, That then my grounds of certainty from ideas are plainly given up. This being a way of arguing that you often

* 2 Cor. iii. 5. † Tuſculan. Quæſt. L. 1. c. 23. ‡ Eccl. xi. 5.
‖ C. xxiv. v. 39. ** 1ſt Anſwer. †† Ibid.

make

impoſſible for us, by the contemplation of our own ideas, without revelation, to diſcover, whether omnipotency has not given to ſome ſyſtems of matter fitly diſpoſed a power to perceive and think, or elſe joined and fixed to matter ſo diſpoſed a thinking immaterial ſubſtance: it being, in reſpect of our notions, not much more remote from our comprehenſion to conceive, that God can, if he pleaſes, ſuperadd to matter a faculty of thinking, than that he ſhould ſuperadd to it another ſubſtance, with a faculty of thinking; ſince we know not wherein thinking conſiſts, nor to what ſort of ſubſtances the Almighty has been pleaſed to give that power, which cannot be in any created being, but merely by the good pleaſure and bounty of the Creator. For I ſee no contradiction in it, that the firſt eternal thinking being ſhould, if he pleaſed, give to certain ſyſtems of created ſenſeleſs matter, put together as he thinks fit, ſome degrees of ſenſe, perception, and thought: though, as I think, I have proved, lib. iv. ch. 10. §. 14, &c. it is no leſs than a contradiction to ſuppoſe matter (which is evidently in its own nature void of ſenſe and thought) ſhould be that eternal firſt-thinking being. What certainty of knowledge can any one have that ſome perceptions, ſuch as, v. g. pleaſure and pain, ſhould not be in ſome bodies themſelves, after a certain manner modified and moved, as well as that they ſhould be in an immaterial ſubſtance, upon the motion of the parts of body? Body, as far as we can conceive, being able only to ſtrike and affect body; and motion, according to the utmoſt reach of our ideas, being able to produce nothing but motion: ſo that when we allow it to produce pleaſure or pain, or the idea of a colour or ſound, we are fain to quit our reaſon, go beyond our ideas, and attribute it wholly to the good pleaſure of

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make uſe of, I have often had occaſion to conſider it, and cannot after all ſee the force of this argument. I acknowledge that this or that propoſition cannot upon my principles be demonſtrated; ergo, I grant this propoſition to be falſe, that certainty conſiſts in the perception of the agreement or diſagreement of ideas. For that is my ground of certainty, and till that be given up, my grounds of certainty are not given up.

our Maker. For ſince we muſt allow he has annexed effects to motion, which we can no way conceive motion able to produce, what reaſon have we to conclude, that he could not order them as well to be produced in a ſubject we cannot conceive capable of them, as well as in a ſubject we cannot conceive the motion of matter can any way operate upon? I ſay not this, that I would any way leſſen the belief of the ſoul's immateriality: I am not here ſpeaking of probability, but knowledge; and I think not only, that it becomes the modeſty of philoſophy not to pronounce magiſterially, where we want that evidence that can produce knowledge; but alſo, that it is of uſe to us to diſcern how far our knowledge does reach: for the ſtate we are at preſent in, not being that of viſion, we muſt, in many things, content ourſelves with faith and probability; and in the preſent queſtion, about the immateriality of the ſoul, if our faculties cannot arrive at demonſtrative certainty, we need not think it ſtrange. All the great ends of morality and religion are well enough ſecured, without philoſophical proofs of the ſoul's immateriality; ſince it is evident, that he who made us at the beginning to ſubſiſt here, ſenſible intelligent beings, and for ſeveral years continued us in ſuch a ſtate, can and will reſtore us to the like ſtate of ſenſibility in another world, and make us capable there to receive the retribution he has deſigned to men, according to their doings in this life. And therefore it is not of ſuch mighty neceſſity to determine one way or the other, as ſome, over-zealous for or againſt the immateriality of the ſoul, have been forward to make the world believe. Who, either on the one ſide, indulging too much their thoughts immerſed altogether in matter, can allow no exiſtence to what is not material: or who, on the other ſide, finding not cogitation within the natural powers of matter, examined over and over again by the utmoſt intention of mind, have the confidence to conclude, that omnipotency itſelf cannot give perception and thought to a ſubſtance which has the modification of ſolidity. He that conſiders how hardly ſenſation is, in our thoughts, reconcileable to extended matter; or exiſtence to any thing

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that has no existence at all; will confess, that he is very far from certainly knowing what his soul is. It is a point which seems to me to be put out of the reach of our knowledge: and he who will give himself leave to consider freely, and look into the dark and intricate part of each hypothesis, will scarce find his reason able to determine him fixedly for or against the soul's materiality. Since on which side soever he views it, either as an unextended substance, or as a thinking extended matter; the difficulty to conceive either will, whilst either alone is in his thoughts, still drive him to the contrary side. An unfair way which some men take with themselves; who, because of the inconceiveableness of something they find in one, throw themselves violently into the contrary hypothesis, though altogether as unintelligible to an unbiassed understanding. This serves not only to show the weakness and the scantiness of our knowledge, but the insignificant triumph of such sort of arguments, which, drawn from our own views, may satisfy us that we can find no certainty on one side of the question; but do not at all thereby help us to truth by running into the opposite opinion, which, on examination, will be found clogged with equal difficulties. For what safety, what advantage to any one is it, for the avoiding the seeming absurdities, and to him unsurmountable rubs he meets with in one opinion, to take refuge in the contrary, which is built on something altogether as inexplicable, and as far remote from his comprehension? It is past controversy, that we have in us something that thinks; our very doubts about what it is confirm the certainty of its being, though we must content ourselves in the ignorance of what kind of being it is: and it is in vain to go about to be sceptical in this, as it is unreasonable in most other cases to be positive against the being of any thing, because we cannot comprehend its nature. For I would fain know what substance exists, that has not something in it which manifestly baffles our understandings. Other spirits, who see and know the nature and inward constitution of things, how much must they exceed us in knowledge? To which if we add larger comprehension, which enables

bles them at one glance to see the connexion and agreement of very many ideas, and readily supplies to them the intermediate proofs, which we by single and slow steps, and long poring in the dark, hardly at last find out, and are often ready to forget one before we have hunted out another; we may guess at some part of the happiness of superior ranks of spirits, who have a quicker and more penetrating sight, as well as a larger field of knowledge. But to return to the argument in hand; our knowledge, I say, is not only limited to the paucity and imperfections of the ideas we have, and which we employ it about, but even comes short of that too. But how far it reaches, let us now inquire.

How far our knowledge reaches.

§. 7. The affirmations or negations we make concerning the ideas we have, may, as I have before intimated in general, be reduced to these four sorts, viz. identity, co-existence, relation, and real existence. I shall examine how far our knowledge extends in each of these.

1. Our knowledge of identity and diversity, as far as our ideas.

§. 8. First, as to identity and diversity, in this way of agreement or disagreement of our ideas, our intuitive knowledge is as far extended as our ideas themselves: and there can be no idea in the mind, which it does not presently, by an intuitive knowledge, perceive to be what it is, and to be different from any other.

2. Of co-existence, a very little way.

§. 9. Secondly, as to the second sort, which is the agreement or disagreement of our ideas in co-existence; in this our knowledge is very short, though in this consists the greatest and most material part of our knowledge concerning substances. For our ideas of the species of substances being, as I have showed, nothing but certain collections of simple ideas united in one subject, and so co-existing together; v. g. our idea of flame is a body hot, luminous, and moving upward; of gold, a body heavy to a certain degree, yellow, malleable, and fusible: these, or some such complex ideas as these in men's minds, do these two names of the different substances, flame and gold, stand for. When we would know any thing

thing farther concerning theſe, or any other ſort of ſubſtances, what do we inquire, but what other qualities or power theſe ſubſtances have or have not? Which is nothing elſe but to know what other ſimple ideas do or do not co-exiſt with thoſe that make up that complex idea.

Becauſe the connexion between moſt ſimple ideas is unknown.

§. 10. This, how weighty and conſiderable a part ſoever of human ſcience, is yet very narrow, and ſcarce any at all. The reaſon whereof is, that the ſimple ideas, whereof our complex ideas of ſubſtances are made up, are, for the moſt part, ſuch as carry with them, in their own nature, no viſible neceſſary connexion or inconſiſtency with any other ſimple ideas, whoſe co-exiſtence with them we would inform ourſelves about.

Eſpecially of ſecondary qualities.

§. 11. The ideas that our complex ones of ſubſtances are made up of, and about which our knowledge concerning ſubſtances is moſt employed, are thoſe of their ſecondary qualities: which depending all (as has been ſhown) upon the primary qualities of their minute and inſenſible parts; or if not upon them, upon ſomething yet more remote from our comprehenſion; it is impoſſible we ſhould know which have a neceſſary union or inconſiſtency one with another: for not knowing the root they ſpring from, not knowing what ſize, figure, and texture of parts they are, on which depend, and from which reſult, thoſe qualities which make our complex idea of gold; it is impoſſible we ſhould know what other qualities reſult from, or are incompatible with, the ſame conſtitution of the inſenſible parts of gold, and ſo conſequently muſt always co-exiſt with that complex idea we have of it, or elſe are inconſiſtent with it.

Becauſe all connexion between any ſecondary and primary qualities is undiſcoverable.

§. 12. Beſides this ignorance of the primary qualities of the inſenſible parts of bodies, on which depend all their ſecondary qualities, there is yet another and more incurable part of ignorance, which ſets us more remote from a certain knowledge of the co-exiſtence or in-co-exiſtence (if I may

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ſo ſay) of different ideas in the ſame ſubject; and that is, that there is no diſcoverable connexion between any ſecondary quality and thoſe primary qualities which it depends on.

§. 13. That the ſize, figure, and motion of one body ſhould cauſe a change in the ſize, figure, and motion of another body, is not beyond our conception: the ſeparation of the parts of one body upon the intruſion of another; and the change from reſt to motion upon impulſe; theſe and the like ſeem to have ſome connexion one with another. And if we knew theſe primary qualities of bodies, we might have reaſon to hope we might be able to know a great deal more of theſe operations of them one with another: but our minds not being able to diſcover any connexion betwixt theſe primary qualities of bodies and the ſenſations that are produced in us by them, we can never be able to eſtabliſh certain and undoubted rules of the conſequences or co-exiſtence of any ſecondary qualities, though we could diſcover the ſize, figure, or motion of thoſe inviſible parts which immediately produce them. We are ſo far from knowing what figure, ſize, or motion of parts produce a yellow colour, a ſweet taſte, or a ſharp ſound, that we can by no means conceive how any ſize, figure, or motion of any particles, can poſſibly produce in us the idea of any colour, taſte, or ſound whatſoever; there is no conceivable connexion betwixt the one and the other.

§. 14. In vain therefore ſhall we endeavour to diſcover by our ideas (the only true way of certain and univerſal knowledge) what other ideas are to be found conſtantly joined with that of our complex idea of any ſubſtance: ſince we neither know the real conſtitution of the minute parts on which their qualities do depend; nor, did we know them, could we diſcover any neceſſary connexion between them and any of the ſecondary qualities: which is neceſſary to be done before we can certainly know their neceſſary co-exiſtence. So that let our complex idea of any ſpecies of ſubſtances be what it will, we can hardly, from the ſimple ideas contained in it, certainly determine the neceſſary co-exiſtence of any other quality whatſoever. Our knowledge

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in all theſe inquiries reaches very little farther than our experience. Indeed, ſome few of the primary qualities have a neceſſary dependence and viſible connexion one with another, as figure neceſſarily ſuppoſes extenſion; receiving or communicating motion by impulſe, ſuppoſes ſolidity. But though theſe and perhaps ſome other of our ideas have, yet there are ſo few of them, that have a viſible connexion one with another, that we can by intuition or demonſtration diſcover the co-exiſtence of very few of the qualities are to be found united in ſubſtances: and we are left only to the aſſiſtance of our ſenſes, to make known to us what qualities they contain. For of all the qualities that are co-exiſtent in any ſubject, without this dependence and evident connexion of their ideas one with another, we cannot know certainly any two to co-exiſt any farther than experience, by our ſenſes, informs us. Thus though we ſee the yellow colour, and upon trial find the weight, malleableneſs, fuſibility, and fixedneſs, that are united in a piece of gold; yet becauſe no one of theſe ideas has any evident dependence, or neceſſary connexion with the other, we cannot certainly know, that where any four of theſe are, the fifth will be there alſo, how highly probable ſoever it may be; becauſe the higheſt probability amounts not to certainty, without which there can be no true knowledge. For this co-exiſtence can be no farther known than it is perceived; and it cannot be perceived but either in particular ſubjects, by the obſervation of our ſenſes, or, in general, by the neceſſary connexion of the ideas themſelves.

Of repugnancy to co-exiſt, larger.

§. 15. As to the incompatibility or repugnancy to co-exiſtence, we may know, that any ſubject may have of each ſort of primary qualities but one particular at once; v. g. each particular extenſion, figure, number of parts, motion, excludes all other of each kind. The like alſo is certain of all ſenſible ideas peculiar to each ſenſe; for whatever of each kind is preſent in any ſubject, excludes all other of that ſort; v. g. no one ſubject can have two ſmells or two colours at the ſame time. To this perhaps will be ſaid, Has not an opal, or the infuſion of lignum

lignum nephriticum, two colours at the ſame time? To which I anſwer, that theſe bodies, to eyes differently placed, may at the ſame time afford different colours: but I take liberty alſo to ſay, that, to eyes differently placed, it is different parts of the object that reflect the particles of light: and therefore it is not the ſame part of the object, and ſo not the very ſame ſubject, which at the ſame time appears both yellow and azure. For it is as impoſſible that the very ſame particle of any body ſhould at the ſame time differently modify or reflect the rays of light, as that it ſhould have two different figures and textures at the ſame time.

Of the co-exiſtence of powers, a very little way.

§. 16. But as to the powers of ſubſtances to change the ſenſible qualities of other bodies, which make a great part of our inquiries about them, and is no inconſiderable branch of our knowledge; I doubt, as to theſe, whether our knowledge reaches much farther than our experience; or whether we can come to the diſcovery of moſt of theſe powers, and be certain that they are in any ſubject, by the connexion with any of thoſe ideas which to us make its eſſence. Becauſe the active and paſſive powers of bodies, and their ways of operating, conſiſting in a texture and motion of parts, which we cannot by any means come to diſcover; it is but in very few caſes, we can be able to perceive their dependence on, or repugnance to, any of thoſe ideas which make our complex one of that ſort of things. I have here inſtanced in the corpuſcularian hypotheſis, as that which is thought to go fartheſt in an intelligible explication of thoſe qualities of bodies; and I fear the weakneſs of human underſtanding is ſcarce able to ſubſtitute another, which will afford us a fuller and clearer diſcovery of the neceſſary connexion and co-exiſtence of the powers which are to be obſerved united in ſeveral ſorts of them. This at leaſt is certain, that which-ever hypotheſis be cleareſt and trueſt, (for of that it is not my buſineſs to determine) our knowledge concerning corporeal ſubſtances will be very little advanced by any of them, till we are made to ſee what qualities and powers of bodies have a neceſſary connexion or repugnancy

nancy one with another; which in the preſent ſtate of philoſophy, I think, we know but to a very ſmall degree: and I doubt whether, with thoſe faculties we have, we ſhall ever be able to carry our general knowledge (I ſay not particular experience) in this part much farther. Experience is that which in this part we muſt depend on. And it were to be wiſhed that it were more improved. We find the advantages ſome men's generous pains have this way brought to the ſtock of natural knowledge. And if others, eſpecially the philoſophers by fire, who pretend to it, had been ſo wary in their obſervations, and ſincere in their reports, as thoſe who call themſelves philoſophers ought to have been; our acquaintance with the bodies here about us, and our inſight into their powers and operations, had been yet much greater.

Of ſpirits, yet narrower.

§. 17. If we are at a loſs in reſpect of the powers and operations of bodies, I think it is eaſy to conclude, we are much more in the dark in reference to the ſpirits; whereof we naturally have no ideas, but what we draw from that of our own, by reflecting on the operations of our own ſouls within us, as far as they can come within our obſervation. But how inconſiderable a rank the ſpirits that inhabit our bodies hold amongſt thoſe various and poſſibly innumerable kinds of nobler beings; and how far ſhort they come of the endowments and perfections of cherubims and ſeraphims, and infinite ſorts of ſpirits above us; is what by a tranſient hint, in another place, I have offered to my reader's conſideration.

3. Of other relations, it is not eaſy to ſay how far.

§. 18. As to the third ſort of our knowledge, viz. the agreement or diſagreement of any of our ideas in any other relation: this, as it is the largeſt field of our knowledge, ſo it is hard to determine how far it may extend; becauſe the advances that are made in this part of knowledge, depending on our ſagacity in finding intermediate ideas, that may ſhow the relations and habitudes of ideas, whoſe co-exiſtence is not conſidered, it is a hard matter to tell when we are at an end of ſuch diſcoveries; and when reaſon has all the helps it is

capable of, for the finding of proofs, or examining the agreement or disagreement of remote ideas. They that are ignorant of algebra cannot imagine the wonders in this kind are to be done by it: and what farther improvements and helps, advantageous to other parts of knowledge, the sagacious mind of man may yet find out, it is not easy to determine. This at least I believe, that the ideas of quantity are not those alone that are capable of demonstration and knowledge; and that other, and perhaps more useful parts of contemplation, would afford us certainty, if vices, passions, and domineering interest did not oppose or menace such endeavours.

Morality capable of demonstration.

The idea of a supreme being, infinite in power, goodness, and wisdom, whose workmanship we are, and on whom we depend; and the idea of ourselves, as understanding rational beings; being such as are clear in us, would, I suppose, if duly considered and pursued, afford such foundations of our duty and rules of action, as might place morality amongst the sciences capable of demonstration: wherein I doubt not but from self-evident propositions, by necessary consequences, as incontestable as those in mathematicks, the measures of right and wrong might be made out to any one that will apply himself with the same indifferency and attention to the one, as he does to the other of these sciences. The relation of other modes may certainly be perceived, as well as those of number and extension: and I cannot see why they should not also be capable of demonstration, if due methods were thought on to examine or pursue their agreement or disagreement. Where there is no property, there is no injustice, is a proposition as certain as any demonstration in Euclid: for the idea of property being a right to any thing; and the idea to which the name injustice is given, being the invasion or violation of that right; it is evident, that these ideas being thus established, and these names annexed to them, I can as certainly know this proposition to be true, as that a triangle has three angles equal to two right ones. Again, "no government allows absolute liberty:" The idea of government being the establishment of society upon

upon certain rules or laws which require conformity to them; and the idea of abſolute liberty being for any one to do whatever he pleaſes; I am as capable of being certain of the truth of this propoſition, as of any in the mathematicks.

Two things have made moral ideas thought incapable of demonſtration: their complexedneſs, and want of ſenſible repreſentations.

§. 19. That which in this reſpect has given the advantage to the ideas of quantity, and made them thought more capable of certainty and demonſtration, is,

Firſt, that they can be ſet down and repreſented by ſenſible marks, which have a greater and nearer correſpondence with them than any words or ſounds whatſoever. Diagrams drawn on paper are copies of the ideas in the mind, and not liable to the uncertainty that words carry in their ſignification. An angle, circle, or ſquare, drawn in lines, lies open to the view, and cannot be miſtaken: it remains unchangeable, and may at leiſure be conſidered and examined, and the demonſtration be reviſed, and all the parts of it may be gone over more than once without any danger of the leaſt change in the ideas. This cannot be thus done in moral ideas, we have no ſenſible marks that reſemble them, whereby we can ſet them down; we have nothing but words to expreſs them by: which though, when written, they remain the ſame, yet the ideas they ſtand for may change in the ſame man; and it is very ſeldom that they are not different in different perſons.

Secondly, another thing that makes the greater difficulty in ethicks, is, that moral ideas are commonly more complex than thoſe of the figures ordinarily conſidered in mathematicks. From whence theſe two inconveniencies follow: Firſt, that their names are of more uncertain ſignification, the preciſe collection of ſimple ideas they ſtand for not being ſo eaſily agreed on, and ſo the ſign that is uſed for them in communication always, and in thinking often, does not ſteadily carry with it the ſame idea. Upon which the ſame diſorder, confuſion, and error follow, as would if a man, going to demonſtrate ſomething of an heptagon, ſhould, in the diagram he took to do it, leave out one of the angles,

or by overſight make the figure with one angle more than the name ordinarily imported, or he intended it ſhould, when at firſt he thought of his demonſtration. This often happens, and is hardly avoidable in very complex moral ideas, where the ſame name being retained, one angle, i. e. one ſimple idea is left out or put in the complex one, (ſtill called by the ſame name) more at one time than another. Secondly, from the complexedneſs of theſe moral ideas, there follows another inconvenience, viz. that the mind cannot eaſily retain thoſe preciſe combinations, ſo exactly and perfectly as is neceſſary in the examination of the habitudes and correſpondencies, agreements or diſagreements, of ſeveral of them one with another; eſpecially where it is to be judged of by long deductions, and the intervention of ſeveral other complex ideas, to ſhow the agreement or diſagreement of two remote ones.

The great help againſt this which mathematicians find in diagrams and figures, which remain unalterable in their draughts, is very apparent, and the memory would often have great difficulty otherwiſe to retain them ſo exactly, whilſt the mind went over the parts of them ſtep by ſtep, to examine their ſeveral correſpondencies. And though in caſting up a long ſum either in addition, multiplication, or diviſion, every part be only a progreſſion of the mind, taking a view of its own ideas, and conſidering their agreement or diſagreement; and the reſolution of the queſtion be nothing but the reſult of the whole, made up of ſuch particulars, whereof the mind has a clear perception: yet without ſetting down the ſeveral parts by marks, whoſe preciſe ſignifications are known, and by marks that laſt and remain in view when the memory had let them go, it would be almoſt impoſſible to carry ſo many different ideas in the mind, without confounding or letting ſlip ſome parts of the reckoning, and thereby making all our reaſonings about it uſeleſs. In which caſe, the cyphers or marks help not the mind at all to perceive the agreement of any two or more numbers, their equalities or proportions: that the mind has only by intuition of its own ideas of the numbers themſelves. But the numerical

rical characters are helps to the memory, to record and retain the ſeveral ideas about which the demonſtration is made, whereby a man may know how far his intuitive knowledge, in ſurveying ſeveral of the particulars, has proceeded; that ſo he may without confuſion go on to what is yet unknown, and at laſt have in one view before him the reſult of all his perceptions and reaſonings.

Remedies of thoſe difficulties.

§. 20. One part of theſe diſadvantages in moral ideas, which has made them be thought not capable of demonſtration, may in a good meaſure be remedied by definitions, ſetting down that collection of ſimple ideas, which every term ſhall ſtand for, and then uſing the terms ſteadily and conſtantly for that preciſe collection. And what methods algebra, or ſomething of that kind, may hereafter ſuggeſt, to remove the other difficulties, it is not eaſy to foretel. Confident I am, that if men would in the ſame method, and with the ſame indifferency, ſearch after moral, as they do mathematical truths, they would find them have a ſtronger connexion one with another, and a more neceſſary conſequence from our clear and diſtinct ideas, and to come nearer perfect demonſtration than is commonly imagined. But much of this is not to be expected, whilſt the deſire of eſteem, riches, or power, makes men eſpouſe the well-endowed opinions in faſhion, and then ſeek arguments either to make good their beauty, or varniſh over and cover their deformity: nothing being ſo beautiful to the eye, as truth is to the mind; nothing ſo deformed and irreconcileable to the underſtanding as a lye. For though many a man can with ſatisfaction enough own a no very handſome wife in his boſom; yet who is bold enough openly to avow, that he has eſpouſed a falſehood, and received into his breaſt ſo ugly a thing as a lye? Whilſt the parties of men cram their tenets down all men's throats, whom they can get into their power, without permitting them to examine their truth or falſehood, and will not let truth have fair play in the world, nor men the liberty to ſearch after it; what improvements can be expected of this kind? What greater light can be hoped

for in the moral ſciences? The ſubject part of mankind in moſt places might, inſtead thereof, with Egyptian bondage expect Egyptian darkneſs, were not the candle of the Lord ſet up by himſelf in men's minds, which it is impoſſible for the breath or power of man wholly to extinguiſh.

4. Of real exiſtence: we have an intuitive knowledge of our own; demonſtrative, of God's; ſenſitive, of ſome few other things.

§. 21. As to the fourth ſort of our knowledge, viz. of the real actual exiſtence of things, we have an intuitive knowledge of our own exiſtence; and a demonſtrative knowledge of the exiſtence of a God; of the exiſtence of any thing elſe, we have no other but a ſenſitive knowledge, which extends not beyond the objects preſent to our ſenſes.

Our ignorance great.

§. 22. Our knowledge being ſo narrow, as I have ſhowed, it will perhaps give us ſome light into the preſent ſtate of our minds, if we look a little into the dark ſide, and take a view of our ignorance: which, being infinitely larger than our knowledge, may ſerve much to the quieting of diſputes, and improvement of uſeful knowledge; if diſcovering how far we have clear and diſtinct ideas, we confine our thoughts within the contemplation of thoſe things that are within the reach of our underſtandings, and launch not out into that abyſs of darkneſs (where we have not eyes to ſee, nor faculties to perceive any thing) out of a preſumption, that nothing is beyond our comprehenſion. But to be ſatisfied of the folly of ſuch a conceit, we need not go far. He that knows any thing, knows this in the firſt place, that he need not ſeek long for inſtances of his ignorance. The meaneſt and moſt obvious things that come in our way, have dark ſides, that the quickeſt ſight cannot penetrate into. The cleareſt and moſt enlarged underſtandings of thinking men find themſelves puzzled, and at a loſs, in every particle of matter. We ſhall the leſs wonder to find it ſo, when we conſider the cauſes of our ignorance; which, from what has been ſaid, I ſuppoſe, will be found to be theſe three:

First, want of ideas.

Secondly, want of a discoverable connexion between the ideas we have.

Thirdly, want of tracing and examining our ideas.

§. 23. First, there are some things, and those not a few, that we are ignorant of, for want of ideas.

First, one cause of it want of ideas, either such as we have no conception of, or such as particularly we have not.

First; all the simple ideas we have, are confined (as I have shown) to those we receive from corporeal objects by sensation, and from the operations of our own minds as the objects of reflection. But how much these few and narrow inlets are disproportionate to the vast whole extent of all beings, will not be hard to persuade those, who are not so foolish as to think their span the measure of all things. What other simple ideas it is possible the creatures in other parts of the universe may have, by the assistance of senses and faculties more, or perfecter, than we have, or different from ours, it is not for us to determine. But to say, or think there are no such, because we conceive nothing of them, is no better an argument, than if a blind man should be positive in it, that there was no such thing as sight and colours, because he had no manner of idea of any such thing, nor could by any means frame to himself any notions about seeing. The ignorance and darkness that is in us, no more hinders nor confines the knowledge that is in others, than the blindness of a mole is an argument against the quicksightedness of an eagle. He that will consider the infinite power, wisdom, and goodness of the Creator of all things, will find reason to think, it was not all laid out upon so inconsiderable, mean, and impotent a creature, as he will find man to be; who, in all probability, is one of the lowest of all intellectual beings. What faculties therefore other species of creatures have, to penetrate into the nature and inmost constitutions of things; what ideas they may receive of them, far different from ours; we know not. This we know, and certainly find, that we want several other views of them, besides those we have, to make discoveries of them more perfect. And we may be convinced that the ideas we can attain to by our faculties,

are very disproportionate to things themselves, when a positive, clear, distinct one of substance itself, which is the foundation of all the rest, is concealed from us. But want of ideas of this kind being a part, as well as cause of our ignorance, cannot be described. Only this, I think, I may confidently say of it, that the intellectual and sensible world are in this perfectly alike; that that part, which we see of either of them, holds no proportion with what we see not; and whatsoever we can reach with our eyes, or our thoughts, of either of them, is but a point, almost nothing in comparison of the rest.

Because of their remoteness; or,

§. 24. Secondly, another great cause of ignorance is the want of ideas we are capable of. As the want of ideas, which our faculties are not able to give us, shuts us wholly from those views of things, which it is reasonable to think other beings, perfecter than we, have, of which we know nothing; so the want of ideas I now speak of keeps us in ignorance of things we conceive capable of being known to us. Bulk, figure, and motion, we have ideas of. But though we are not without ideas of these primary qualities of bodies in general, yet not knowing what is the particular bulk, figure, and motion, of the greatest part of the bodies of the universe; we are ignorant of the several powers, efficacies, and ways of operation, whereby the effects, which we daily see, are produced. These are hid from us in some things, by being too remote; and in others, by being too minute. When we consider the vast distance of the known and visible parts of the world, and the reasons we have to think, that what lies within our ken is but a small part of the universe, we shall then discover an huge abyss of ignorance. What are the particular fabricks of the great masses of matter, which make up the whole stupendous frame of corporeal beings, how far they are extended, what is their motion, and how continued or communicated, and what influence they have one upon another, are contemplations that at first glimpse our thoughts lose themselves in. If we narrow our contemplations, and confine our thoughts to this little canton, I mean this system of our sun, and the grosser

groſſer maſſes of matter, that viſibly move about it; what ſeveral ſorts of vegetables, animals, and intellectual corporeal beings, infinitely different from thoſe of our little ſpot of earth, may there probably be in the other planets, to the knowledge of which, even of their outward figures and parts, we can no way attain, whilſt we are confined to this earth; there being no natural means, either by ſenſation or reflection, to convey their certain ideas into our minds? They are out of the reach of thoſe inlets of all our knowledge: and what ſorts of furniture and inhabitants thoſe manſions contain in them, we cannot ſo much as gueſs, much leſs have clear and diſtinct ideas of them.

Becauſe of their minuteneſs.

§. 25. If a great, nay, far the greateſt part of the ſeveral ranks of bodies in the univerſe, eſcape our notice by their remoteneſs, there are others that are no leſs concealed from us by their minuteneſs. Theſe inſenſible corpuſcles being the active parts of matter, and the great inſtruments of nature, on which depend not only all their ſecondary qualities, but alſo moſt of their natural operations; our want of preciſe diſtinct ideas of their primary qualities, keeps us in an incurable ignorance of what we deſire to know about them. I doubt not but if we could diſcover the figure, ſize, texture, and motion of the minute conſtituent parts of any two bodies, we ſhould know without trial ſeveral of their operations one upon another, as we do now the properties of a ſquare or a triangle. Did we know the mechanical affections of the particles of rhubarb, hemlock, opium, and a man; as a watch-maker does thoſe of a watch, whereby it performs its operations, and of a file which by rubbing on them will alter the figure of any of the wheels; we ſhould be able to tell before-hand, that rhubarb will purge, hemlock kill, and opium make a man ſleep; as well as a watch-maker can, that a little piece of paper laid on the balance will keep the watch from going, till it be removed; or that, ſome ſmall part of it being rubbed by a file, the machine would quite loſe its motion, and the watch go no more. The diſſolving of ſilver in aqua fortis, and gold in aqua regia, and not vice verſa,

would be then perhaps no more difficult to know, than it is to a ſmith to underſtand why the turning of one key will open a lock, and not the turning of another. But whilſt we are deſtitute of ſenſes acute enough to diſcover the minute particles of bodies, and to give us ideas of their mechanical affections, we muſt be content to be ignorant of their properties and ways of operation; nor can we be aſſured about them any farther, than ſome few trials we make are able to reach. But whether they will ſucceed again another time, we cannot be certain. This hinders our certain knowledge of univerſal truths concerning natural bodies: and our reaſon carries us herein very little beyond particular matter of fact.

Hence no ſcience of bodies.

§. 26. And therefore I am apt to doubt, that how far ſoever human induſtry may advance uſeful and experimental philoſophy in phyſical things, ſcientifical will ſtill be out of our reach; becauſe we want perfect and adequate ideas of thoſe very bodies which are neareſt to us, and moſt under our command. Thoſe which we have ranked into claſſes under names, and we think ourſelves beſt acquainted with, we have but very imperfect and incomplete ideas of. Diſtinct ideas of the ſeveral ſorts of bodies that fall under the examination of our ſenſes perhaps we may have: but adequate ideas, I ſuſpect, we have not of any one amongſt them. And though the former of theſe will ſerve us for common uſe and diſcourſe, yet whilſt we want the latter, we are not capable of ſcientifical knowledge; nor ſhall ever be able to diſcover general, inſtructive, unqueſtionable truths concerning them. Certainty and demonſtration are things we muſt not, in theſe matters, pretend to. By the colour, figure, taſte, and ſmell, and other ſenſible qualities, we have as clear and diſtinct ideas of ſage and hemlock, as we have of a circle and a triangle: but having no ideas of the particular primary qualities of the minute parts of either of theſe plants, nor of other bodies which we would apply them to, we cannot tell what effects they will produce; nor when we ſee thoſe effects, can we ſo much as gueſs, much leſs know, their manner of pro-

production. Thus having no ideas of the particular mechanical affections of the minute parts of bodies that are within our view and reach, we are ignorant of their conſtitutions, powers, and operations: and of bodies more remote we are yet more ignorant, not knowing ſo much as their very outward ſhapes, or the ſenſible and groſſer parts of their conſtitutions.

Much leſs of ſpirits.

§. 27. This, at firſt, will ſhow us how diſproportionate our knowledge is to the whole extent even of material beings; to which if we add the conſideration of that infinite number of ſpirits that may be, and probably are, which are yet more remote from our knowledge, whereof we have no cognizance, nor can frame to ourſelves any diſtinct ideas of their ſeveral ranks and ſorts, we ſhall find this cauſe of ignorance conceal from us, in an impenetrable obſcurity, almoſt the whole intellectual world; a greater certainly, and more beautiful world than the material. For bating ſome very few, and thoſe, if I may ſo call them, ſuperficial ideas of ſpirit, which by reflection we get of our own, and from thence the beſt we can collect of the father of all ſpirits, the eternal independent author of them and us and all things; we have no certain information, ſo much as of the exiſtence of other ſpirits, but by revelation. Angels of all ſorts are naturally beyond our diſcovery: and all thoſe intelligences whereof it is likely there are more orders than of corporeal ſubſtances, are things whereof our natural faculties give us no certain account at all. That there are minds and thinking beings in other men as well as himſelf, every man has a reaſon, from their words and actions, to be ſatisfied: and the knowledge of his own mind cannot ſuffer a man, that conſiders, to be ignorant, that there is a God. But that there are degrees of ſpiritual beings between us and the great God, who is there that by his own ſearch and ability can come to know? Much leſs have we diſtinct ideas of their different natures, conditions, ſtates, powers, and ſeveral conſtitutions, wherein they agree or differ from one another, and from us. And therefore in what concerns their different ſpecies and properties, we are under an abſolute ignorance.

§. 28.

Secondly, want of a discoverable connexion between ideas we have.

§. 28. Secondly, what a small part of the substantial beings that are in the universe, the want of ideas leaves open to our knowledge, we have seen. In the next place, another cause of ignorance, of no less moment, is a want of a discoverable connexion between those ideas we have. For wherever we want that, we are utterly incapable of universal and certain knowledge; and are, in the former case, left only to observation and experiment: which, how narrow and confined it is, how far from general knowledge, we need not be told. I shall give some few instances of this cause of our ignorance, and so leave it. It is evident that the bulk, figure, and motion of several bodies about us, produce in us several sensations, as of colours, sounds, tastes, smells, pleasure and pain, &c. These mechanical affections of bodies having no affinity at all with those ideas they produce in us (there being no conceivable connexion between any impulse of any sort of body and any perception of a colour or smell, which we find in our minds) we can have no distinct knowledge of such operations beyond our experience; and can reason no otherwise about them, than as effects produced by the appointment of an infinitely wise agent, which perfectly surpass our comprehensions. As the ideas of sensible secondary qualities which we have in our minds, can by us be no way deduced from bodily causes, nor any correspondence or connexion be found between them and those primary qualities which (experience shows us) produce them in us; so on the other side, the operation of our minds upon our bodies is as inconceivable. How any thought should produce a motion in body is as remote from the nature of our ideas, as how any body should produce any thought in the mind. That it is so, if experience did not convince us, the consideration of the things themselves would never be able in the least to discover to us. These, and the like, though they have a constant and regular connexion, in the ordinary course of things; yet that connexion being not discoverable in the ideas themselves, which appearing to have no necessary dependence one on another, we can

can attribute their connexion to nothing elſe but the arbitrary determination of that all-wiſe agent, who has made them to be, and to operate as they do, in a way wholly above our weak underſtandings to conceive.

Inſtances. §. 29. In ſome of our ideas there are certain relations, habitudes, and connexions, ſo viſibly included in the nature of the ideas themſelves, that we cannot conceive them ſeparable from them by any power whatſoever. And in theſe only we are capable of certain and univerſal knowledge. Thus the idea of a right-lined triangle neceſſarily carries with it an equality of its angles to two right ones. Nor can we conceive this relation, this connexion of theſe two ideas, to be poſſibly mutable, or to depend on any arbitrary power, which of choice made it thus, or could make it otherwiſe. But the coherence and continuity of the parts of matter; the production of ſenſation in us of colours and ſounds, &c. by impulſe and motion; nay, the original rules and communication of motion being ſuch, wherein we can diſcover no natural connexion with any ideas we have; we cannot but aſcribe them to the arbitrary will and good pleaſure of the wiſe architect. I need not, I think, here mention the reſurrection of the dead, the future ſtate of this globe of earth, and ſuch other things, which are by every one acknowledged to depend wholly on the determination of a free agent. The things that, as far as our obſervation reaches, we conſtantly find to proceed regularly, we may conclude do act by a law ſet them; but yet by a law, that we know not: whereby, though cauſes work ſteadily, and effects conſtantly flow from them, yet their connexions and dependencies being not diſcoverable in our ideas, we can have but an experimental knowledge of them. From all which it is eaſy to perceive what a darkneſs we are involved in, how little it is of being, and the things that are, that we are capable to know. And therefore we ſhall do no injury to our knowledge, when we modeſtly think with ourſelves, that we are ſo far from being able to comprehend the whole nature of the univerſe, and all the things contained in it, that we are not capable of a philoſophical knowledge of the

bodies

bodies that are about us, and make a part of us: concerning their secondary qualities, powers, and operations, we can have no universal certainty. Several effects come every day within the notice of our senses, of which we have so far sensitive knowledge; but the causes, manner, and certainty of their production, for the two foregoing reasons, we must be content to be very ignorant of. In these we can go no farther than particular experience informs us of matter of fact, and by analogy to guess what effects the like bodies are, upon other trials, like to produce. But as to a perfect science of natural bodies (not to mention spiritual beings) we are, I think, so far from being capable of any such thing, that I conclude it lost labour to seek after it.

Thirdly, want of tracing our ideas.

§. 30. Thirdly, where we have adequate ideas, and where there is a certain and discoverable connexion between them, yet we are often ignorant, for want of tracing those ideas which we have, or may have; and for want of finding out those intermediate ideas, which may show us what habitude of agreement or disagreement they have one with another. And thus many are ignorant of mathematical truths, not out of any imperfection of their faculties, or uncertainty in the things themselves; but for want of application in acquiring, examining, and by due ways comparing those ideas. That which has most contributed to hinder the due tracing of our ideas, and finding out their relations, and agreements or disagreements one with another, has been, I suppose, the ill use of words. It is impossible that men should ever truly seek, or certainly discover the agreement or disagreement of ideas themselves, whilst their thoughts flutter about, or stick only in sounds of doubtful and uncertain significations. Mathematicians abstracting their thoughts from names, and accustoming themselves to set before their minds the ideas themselves that they would consider, and not sounds instead of them, have avoided thereby a great part of that perplexity, puddering, and confusion, which has so much hindered men's progress in other parts of knowledge. For whilst they stick in words of undetermined and uncertain significa-

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tion, they are unable to distinguish true from false, certain from probable, consistent from inconsistent, in their own opinions. This having been the fate or misfortune of a great part of men of letters, the increase brought into the stock of real knowledge, has been very little, in proportion to the schools, disputes, and writings, the world has been filled with; whilst students being lost in the great wood of words, knew not whereabout they were, how far their discoveries were advanced, or what was wanting in their own or the general stock of knowledge. Had men, in the discoveries of the material, done as they have in those of the intellectual world, involved all in the obscurity of uncertain and doubtful ways of talking, volumes writ of navigation and voyages, theories and stories of zones and tides, multiplied and disputed; nay, ships built, and fleets sent out, would never have taught us the way beyond the line; and the Antipodes would be still as much unknown, as when it was declared heresy to hold there were any. But having spoken sufficiently of words, and the ill or careless use that is commonly made of them, I shall not say any thing more of it here.

Extent in respect to universality.

§. 31. Hitherto we have examined the extent of our knowledge, in respect of the several sorts of beings that are. There is another extent of it, in respect of universality, which will also deserve to be considered; and in this regard, our knowledge follows the nature of our ideas. If the ideas are abstract, whose agreement or disagreement we perceive, our knowledge is universal. For what is known of such general ideas, will be true of every particular thing, in whom that essence, i. e. that abstract idea is to be found; and what is once known of such ideas, will be perpetually and for ever true. So that as to all general knowledge, we must search and find it only in our minds, and it is only the examining of our own ideas, that furnisheth us with that. Truths belonging to essences of things, (that is, to abstract ideas) are eternal, and are to be found out by the contemplation only of those essences: as the existences of things are to be known only from experience. But having

more

more to say of this in the chapters where I shall speak of general and real knowledge, this may here suffice as to the universality of our knowledge in general.

CHAP. IV.

Of the Reality of Knowledge.

Objection. Knowledge placed in ideas may be all bare vision.

§. 1. I DOUBT not but my reader by this time may be apt to think, that I have been all this while only building a castle in the air; and be ready to say to me, "To what purpose all this stir? Know- "ledge, say you, is only the perception of "the agreement or disagreement of our own ideas: but "who knows what those ideas may be? Is there any "thing so extravagant, as the imaginations of men's "brains? Where is the head that has no chimeras in "it? Or if there be a sober and a wise man, what dif- "ference will there be, by your rules, between his "knowledge and that of the most extravagant fancy in "the world? They both have their ideas, and perceive "their agreement and disagreement one with another. "If there be any difference between them, the advan- "tage will be on the warm-headed man's side, as hav- "ing the more ideas, and the more lively: and so, by "your rules, he will be the more knowing. If it be "true, that all knowledge lies only in the perception "of the agreement or disagreement of our own ideas, "the visions of an enthusiast, and the reasonings of a "sober man, will be equally certain. It is no matter "how things are; so a man observe but the agreement "of his own imaginations, and talk conformably, it is "all truth, all certainty. Such castles in the air will "be as strong holds of truth, as the demonstrations of "Euclid. That an harpy is not a centaur is by this "way as certain knowledge, and as much a truth, as "that a square is not a circle.

" But of what use is all this fine knowledge of men's " own imaginations, to a man that inquires after the " reality of things? It matters not what men's fancies " are, it is the knowledge of things that is only to be " prized; it is this alone gives a value to our reasonings, and preference to one man's knowledge over " another's, that it is of things as they really are, and " not of dreams and fancies."

Answ. Not so, where ideas agree with things.

§. 2. To which I answer, that if our knowledge of our ideas terminate in them, and reach no farther, where there is something farther intended, our most serious thoughts will be of little more use, than the reveries of a crazy brain; and the truths built thereon of no more weight, than the discourses of a man, who sees things clearly in a dream, and with great assurance utters them. But, I hope, before I have done, to make it evident, that this way of certainty, by the knowledge of our own ideas, goes a little farther than bare imagination: and I believe it will appear, that all the certainty of general truths a man has, lies in nothing else.

§. 3. It is evident, the mind knows not things immediately, but only by the intervention of the ideas it has of them. Our knowledge therefore is real, only so far as there is a conformity between our ideas and the reality of things. But what shall be here the criterion? How shall the mind, when it perceives nothing but its own ideas, know that they agree with things themselves? This, though it seems not to want difficulty, yet, I think, there be two sorts of ideas, that, we may be assured, agree with things.

As, 1. All simple ideas do.

§. 4. First, the first are simple ideas, which since the mind, as has been showed, can by no means make to itself, must necessarily be the product of things operating on the mind in a natural way, and producing therein those perceptions which by the wisdom and will of our maker they are ordained and adapted to. From whence it follows, that simple ideas are not fictions of our fancies, but the natural and regular productions of things without us, really operating upon us, and so carry with them all the con-

conformity which is intended, or which our ſtate requires: for they repreſent to us things under thoſe appearances which they are fitted to produce in us, whereby we are enabled to diſtinguiſh the ſorts of particular ſubſtances, to diſcern the ſtates they are in, and ſo to take them for our neceſſities, and to apply them to our uſes. Thus the idea of whiteneſs, or bitterneſs, as it is in the mind, exactly anſwering that power which is in any body to produce it there, has all the real conformity it can, or ought to have, with things without us. And this conformity between our ſimple ideas, and the exiſtence of things, is ſufficient for real knowledge.

2. All complex ideas, except of ſubſtances.

§. 5. Secondly, all our complex ideas, except thoſe of ſubſtances, being archetypes of the mind's own making, not intended to be the copies of any thing, nor referred to the exiſtence of any thing, as to their originals; cannot want any conformity neceſſary to real knowledge. For that which is not deſigned to repreſent any thing but itſelf, can never be capable of a wrong repreſentation, nor miſlead us from the true apprehenſion of any thing, by its diſlikeneſs to it; and ſuch, excepting thoſe of ſubſtances, are all our complex ideas: which, as I have ſhowed in another place, are combinations of ideas, which the mind, by its free choice, puts together, without conſidering any connexion they have in nature. And hence it is, that in all theſe ſorts the ideas themſelves are conſidered as the archetypes, and things no otherwiſe regarded, but as they are conformable to them. So that we cannot but be infallibly certain, that all the knowledge we attain concerning theſe ideas is real, and reaches things themſelves; becauſe in all our thoughts, reaſonings, and diſcourſes of this kind, we intend things no farther than as they are conformable to our ideas. So that in theſe we cannot miſs of a certain and undoubted reality.

Hence the reality of mathematical knowledge

§. 6. I doubt not but it will be eaſily granted, that the knowledge we have of mathematical truths, is not only certain, but real knowledge; and not the bare empty viſion of vain inſignificant chimeras of the brain: and

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yet, if we will consider, we shall find that it is only of our own ideas. The mathematician considers the truth and properties belonging to a rectangle, or circle, only as they are in idea in his own mind. For it is possible he never found either of them existing mathematically, i. e. precisely true, in his life. But yet the knowledge he has of any truths or properties belonging to a circle, or any other mathematical figure, are nevertheless true and certain, even of real things existing; because real things are no farther concerned, nor intended to be meant by any such propositions, than as things really agree to those archetypes in his mind. Is it true of the idea of a triangle, that its three angles are equal to two right ones? It is true also of a triangle, wherever it really exists. Whatever other figure exists, that is not exactly answerable to the idea of a triangle in his mind, is not at all concerned in that proposition: and therefore he is certain all his knowledge concerning such ideas is real knowledge; because intending things no farther than they agree with those his ideas, he is sure what he knows concerning those figures, when they have barely an ideal existence in his mind, will hold true of them also, when they have real existence in matter; his consideration being barely of those figures, which are the same, wherever or however they exist.

And of moral.

§. 7. And hence it follows, that moral knowledge is as capable of real certainty, as mathematicks. For certainty being but the perception of the agreement or disagreement of our ideas; and demonstration nothing but the perception of such agreement, by the intervention of other ideas, or mediums; our moral ideas, as well as mathematical, being archetypes themselves, and so adequate and complete ideas; all the agreement or disagreement, which we shall find in them, will produce real knowledge, as well as in mathematical figures.

Existence not required to make it real.

§. 8. For the attaining of knowledge and certainty, it is requisite that we have determined ideas; and, to make our knowledge real, it is requisite that the ideas answer their archetypes. Nor let it be wondered, that I place the

certainty of our knowledge in the conſideration of our ideas, with ſo little care and regard (as it may ſeem) to the real exiſtence of things: ſince moſt of thoſe diſcourſes, which take up the thoughts, and engage the diſputes of thoſe who pretend to make it their buſineſs to inquire after truth and certainty, will, I preſume, upon examination be found to be general propoſitions, and notions in which exiſtence is not at all concerned. All the diſcourſes of the mathematicians about the ſquaring of a circle, conick ſections, or any other part of mathematicks, concern not the exiſtence of any of thoſe figures; but their demonſtrations, which depend on their ideas, are the ſame, whether there be any ſquare or circle exiſting in the world, or no. In the ſame manner, the truth and certainty of moral diſcourſes abſtracts from the lives of men, and the exiſtence of thoſe virtues in the world whereof they treat. Nor are Tully's offices leſs true, becauſe there is no-body in the world that exactly practiſes his rules, and lives up to that pattern of a virtuous man which he has given us, and which exiſted no where, when he writ, but in idea. If it be true in ſpeculation, i. e. in idea, that murder deſerves death, it will alſo be true in reality of any action that exiſts conformable to that idea of murder. As for other actions, the truth of that propoſition concerns them not. And thus it is of all other ſpecies of things, which have no other eſſences but thoſe ideas, which are in the minds of men.

Nor will it be leſs true or certain, becauſe moral ideas are of our own making and naming.

§. 9. But it will here be ſaid, that if moral knowledge be placed in the contemplation of our own moral ideas, and thoſe, as other modes, be of our own making, what ſtrange notions will there be of juſtice and temperance? What confuſion of virtues and vices, if every one may make what ideas of them he pleaſes? No confuſion or diſorder in the things themſelves, nor the reaſonings about them; no more than (in mathematicks) there would be a diſturbance in the demonſtration, or a change in the properties of figures, and their relations one to another, if a man ſhould make a triangle with four corners, or a

trapezium with four right angles; that is, in plain English, change the names of the figures, and call that by one name, which mathematicians call ordinarily by another. For let a man make to himself the idea of a figure with three angles, whereof one is a right one, and call it, if he please, equilaterum or trapezium, or any thing else, the properties of and demonstrations about that idea will be the same, as if he called it a rectangular triangle. I confess the change of the name, by the impropriety of speech, will at first disturb him, who knows not what idea it stands for; but as soon as the figure is drawn, the consequences and demonstration are plain and clear. Just the same is it in moral knowledge, let a man have the idea of taking from others, without their consent, what their honest industry has possessed them of, and call this justice, if he please. He that takes the name here without the idea put to it, will be mistaken, by joining another idea of his own to that name: but strip the idea of that name, or take it such as it is in the speaker's mind, and the same things will agree to it, as if you called it injustice. Indeed wrong names in moral discourses breed usually more disorder, because they are not so easily rectified as in mathematicks, where the figure, once drawn and seen, makes the name useless and of no force. For what need of a sign, when the thing signified is present and in view? But in moral names that cannot be so easily and shortly done, because of the many decompositions that go to the making up the complex ideas of those modes. But yet for all this, miscalling of any of those ideas, contrary to the usual signification of the words of that language, hinders not but that we may have certain and demonstrative knowledge of their several agreements and disagreements, if we will carefully, as in mathematicks, keep to the same precise ideas, and trace them in their several relations one to another, without being led away by their names. If we but separate the idea under consideration from the sign that stands for it, our knowledge goes equally on in the discovery of real truth and certainty, whatever sounds we make use of.

Miſnaming diſturbs not the certainty of the knowledge.

§. 10. One thing more we are to take notice of, that where God, or any other law-maker, hath defined any moral names, there they have made the eſſence of that ſpecies to which that name belongs; and there it is not ſafe to apply or uſe them otherwiſe: but in other caſes it is bare impropriety of ſpeech to apply them contrary to the common uſage of the country. But yet even this too diſturbs not the certainty of that knowledge, which is ſtill to be had by a due contemplation, and comparing of thoſe even nick-named ideas.

Ideas of ſubſtances have their archetypes without us.

§. 11. Thirdly, there is another ſort of complex ideas, which being referred to archetypes without us, may differ from them, and ſo our knowledge about them may come ſhort of being real. Such are our ideas of ſubſtances, which conſiſting of a collection of ſimple ideas, ſuppoſed taken from the works of nature, may yet vary from them, by having more or different ideas united in them, than are to be found united in the things themſelves. From whence it comes to paſs, that they may, and often do, fail of being exactly conformable to things themſelves.

So far as they agree with thoſe, ſo far our knowledge concerning them is real.

§. 12. I ſay then, that to have ideas of ſubſtances, which, by being conformable to things, may afford us real knowledge, it is not enough, as in modes, to put together ſuch ideas as have no inconſiſtence, though they did never before ſo exiſt: v. g. the ideas of ſacrilege or perjury, &c. were as real and true ideas before, as after the exiſtence of any ſuch fact. But our ideas of ſubſtances being ſuppoſed copies, and referred to archetypes without us, muſt ſtill be taken from ſomething that does or has exiſted; they muſt not conſiſt of ideas put together at the pleaſure of our thoughts, without any real pattern they were taken from, though we can perceive no inconſiſtence in ſuch a combination. The reaſon whereof is, becauſe we knowing not what real conſtitution it is of ſubſtances, whereon our ſimple ideas depend, and which really is the cauſe of the ſtrict union of ſome of them one with another, and

and the exclusion of others; there are very few of them, that we can be sure are, or are not, inconsistent in nature, any farther than experience and sensible observation reach. Herein therefore is founded the reality of our knowledge concerning substances, that all our complex ideas of them must be such, and such only, as are made up of such simple ones, as have been discovered to co-exist in nature. And our ideas being thus true, though not, perhaps, very exact copies, are yet the subjects of real (as far as we have any) knowledge of them. Which (as has been already shown) will not be found to reach very far: but so far as it does, it will still be real knowledge. Whatever ideas we have, the agreement we find they have with others, will still be knowledge. If those ideas be abstract, it will be general knowledge. But, to make it real concerning substances, the ideas must be taken from the real existence of things. Whatever simple ideas have been found to co-exist in any substance, these we may with confidence join together again, and so make abstract ideas of substances. For whatever have once had an union in nature, may be united again.

In our inquiries about substances, we must consider ideas, and not confine our thoughts to names, or species supposed set out by names.

§. 13. This, if we rightly consider, and confine not our thoughts and abstract ideas to names, as if there were, or could be no other sorts of things than what known names had already determined, and as it were set out; we should think of things with greater freedom and less confusion than perhaps we do. It would possibly be thought a bold paradox, if not a very dangerous falsehood, if I should say, that some changelings, who have lived forty years together without any appearance of reason, are something between a man and a beast: which prejudice is founded upon nothing else but a false supposition, that these two names, man and beast, stand for distinct species so set out by real essences, that there can come no other species between them: whereas if we will abstract from those names, and the supposition of such specifick essences made by nature, wherein all things of the same denominations did exactly and

equally partake; if we would not fancy that there were a certain number of these essences, wherein all things, as in moulds, were cast and formed; we should find that the idea of the shape, motion, and life of a man without reason, is as much a distinct idea, and makes as much a distinct sort of things from man and beast, as the idea of the shape of an ass with reason would be different from either that of man or beast, and be a species of an animal between, or distinct from both.

Objection against a changeling being something between a man and beast, answered.

§. 14. Here every body will be ready to ask, If changelings may be supposed something between man and beast, pray what are they? I answer, changelings, which is as good a word to signify something different from the signification of man or beast, as the names man and beast are to have significations different one from the other. This, well considered, would resolve this matter, and show my meaning without any more ado. But I am not so unacquainted with the zeal of some men, which enables them to spin consequences, and to see religion threatened whenever any one ventures to quit their forms of speaking; as not to foresee what names such a proposition as this is like to be charged with: and without doubt it will be asked, If changelings are something between man and beast, what will become of them in the other world? To which I answer, 1. It concerns me not to know or inquire. To their own master they stand or fall. It will make their state neither better nor worse, whether we determine any thing of it or no. They are in the hands of a faithful creator and a bountiful father, who disposes not of his creatures according to our narrow thoughts or opinions, nor distinguishes them according to names and species of our contrivance. And we that know so little of this present world we are in, may, I think, content ourselves without being peremptory in defining the different states, which creatures shall come into, when they go off this stage. It may suffice us, that he hath made known to all those, who are capable of instruction, discoursing, and reasoning,

ing, that they ſhall come to an account, and receive according to what they have done in this body.

§. 15. But, ſecondly, I anſwer, the force of theſe men's queſtion (viz. will you deprive changelings of a future ſtate?) is founded on one of theſe two ſuppoſitions, which are both falſe. The firſt is, that all things that have the outward ſhape and appearance of a man muſt neceſſarily be deſigned to an immortal future being after this life: or, ſecondly, that whatever is of human birth muſt be ſo. Take away theſe imaginations, and ſuch queſtions will be groundleſs and ridiculous. I deſire then thoſe who think there is no more but an accidental difference between themſelves and changelings, the eſſence in both being exactly the ſame, to conſider whether they can imagine immortality annexed to any outward ſhape of the body? the very propoſing it, is, I ſuppoſe, enough to make them diſown it. No one yet, that ever I heard of, how much ſoever immerſed in matter, allowed that excellency to any figure of the groſs ſenſible outward parts, as to affirm eternal life due to it, or a neceſſary conſequence of it; or that any maſs of matter ſhould, after its diſſolution here, be again reſtored hereafter to an everlaſting ſtate of ſenſe, perception, and knowledge, only becauſe it was moulded into this or that figure, and had ſuch a particular frame of its viſible parts. Such an opinion as this, placing immortality in a certain ſuperficial figure, turns out of doors all conſideration of ſoul or ſpirit, upon whoſe account alone ſome corporeal beings have hitherto been concluded immortal, and others not. This is to attribute more to the outſide than inſide of things; and to place the excellency of a man more in the external ſhape of his body, than internal perfections of his ſoul: which is but little better than to annex the great and ineſtimable advantage of immortality and life everlaſting, which he has above other material beings, to annex it, I ſay, to the cut of his beard, or the faſhion of his coat. For this or that outward mark of our bodies no more carries with it the hope of an eternal duration, than the faſhion of a man's ſuit gives him reaſonable grounds to imagine it will never wear out, or that it will make him

immortal. It will perhaps be ſaid, that no-body thinks that the ſhape makes any thing immortal, but it is the ſhape is the ſign of a rational ſoul within, which is immortal. I wonder who made it the ſign of any ſuch thing: for barely ſaying it, will not make it ſo. It would require ſome proofs to perſuade one of it. No figure that I know ſpeaks any ſuch language. For it may as rationally be concluded, that the dead body of a man, wherein there is to be found no more appearance or action of life than there is in a ſtatue, has yet nevertheleſs a living ſoul in it becauſe of its ſhape; as that there is a rational ſoul in a changeling, becauſe he has the outſide of a rational creature; when his actions carry far leſs marks of reaſon with them, in the whole courſe of his life, than what are to be found in many a beaſt.

Monſters. §. 16. But it is the iſſue of rational parents, and muſt therefore be concluded to have a rational ſoul. I know not by what logick you muſt ſo conclude. I am ſure this is a concluſion, that men no where allow of. For if they did, they would not make bold, as every where they do, to deſtroy ill-formed and miſ-ſhaped productions. Ay, but theſe are monſters. Let them be ſo; what will your driveling, unintelligent, intractable changeling be? Shall a defect in the body make a monſter; a defect in the mind (the far more noble, and, in the common phraſe, the far more eſſential part) not? Shall the want of a noſe, or a neck, make a monſter, and put ſuch iſſue out of the rank of men; the want of reaſon and underſtanding, not? This is to bring all back again to what was exploded juſt now: this is to place all in the ſhape, and to take the meaſure of a man only by his outſide. To ſhow that, according to the ordinary way of reaſoning in this matter, people do lay the whole ſtreſs on the figure, and reſolve the whole eſſence of the ſpecies of man (as they make it) into the outward ſhape, how unreaſonable ſoever it be, and how much ſoever they diſown it; we need but trace their thoughts and practice a little farther, and then it will plainly appear. The well-ſhaped changeling is a man, has a rational ſoul, though it appear not; this is paſt doubt, ſay you. Make the

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ears a little longer, and more pointed, and the nose a little flatter than ordinary, and then you begin to boggle: make the face yet narrower, flatter, and longer, and then you are at a stand: add still more and more of the likeness of a brute to it, and let the head be perfectly that of some other animal, then presently it is a monster; and it is demonstration with you that it hath no rational soul, and must be destroyed. Where now (I ask) shall be the just measure of the utmost bounds of that shape, that carries with it a rational soul? For since there have been human fœtuses produced, half beast, and half man; and others three parts one, and one part the other; and so it is possible they may be in all the variety of approaches to the one or the other shape, and may have several degrees of mixture of the likeness of a man or a brute; I would gladly know what are those precise lineaments, which, according to this hypothesis, are, or are not capable of a rational soul to be joined to them. What sort of outside is the certain sign that there is, or is not such an inhabitant within? For till that be done, we talk at random of man: and shall always, I fear, do so, as long as we give ourselves up to certain sounds, and the imaginations of settled and fixed species in nature, we know not what. But after all, I desire it may be considered, that those who think they have answered the difficulty by telling us, that a misshaped fœtus is a monster, run into the same fault they are arguing against, by constituting a species between man and beast. For what else, I pray, is their monster in the case (if the word monster signifies any thing at all) but something neither man nor beast, but partaking somewhat of either? And just so is the changeling before-mentioned. So necessary is it to quit the common notion of species and essences, if we will truly look into the nature of things, and examine them, by what our faculties can discover in them as they exist, and not by groundless fancies, that have been taken up about them.

Words and species.

§. 17. I have mentioned this here, because I think we cannot be too cautious that words and species, in the ordinary

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notions which we have been uſed to of them, impoſe not on us. For I am apt to think, therein lies one great obſtacle to our clear and diſtinct knowledge, eſpecially in reference to ſubſtances; and from thence has roſe a great part of the difficulties about truth and certainty. Would we accuſtom ourſelves to ſeparate our contemplations and reaſonings from words, we might, in a great meaſure, remedy this inconvenience within our own thoughts; but yet it would ſtill diſturb us in our diſcourſe with others, as long as we retained the opinion, that ſpecies and their eſſences were any thing elſe but our abſtract ideas (ſuch as they are) with names annexed to them, to be the ſigns of them.

Recapitulation.

§. 18. Wherever we perceive the agreement or diſagreement of any of our ideas, there is certain knowledge: and wherever we are ſure thoſe ideas agree with the reality of things, there is certain real knowledge. Of which agreement of our ideas, with the reality of things, having here given the marks, I think I have ſhown wherein it is, that certainty, real certainty, conſiſts: which, whatever it was to others, was, I confeſs, to me heretofore, one of thoſe deſiderata which I found great want of.

CHAP. V.

Of Truth in General.

What truth is.

§. 1. WHAT is truth was an inquiry many ages ſince; and it being that which all mankind either do, or pretend to ſearch after, it cannot but be worth our while carefully to examine wherein it conſiſts, and ſo acquaint ourſelves with the nature of it, as to obſerve how the mind diſtinguiſhes it from falſhood.

A right joining or ſeparating of ſigns, i. e. ideas or words.

§. 2. Truth then ſeems to me, in the proper import of the word, to ſignify nothing but the joining or ſeparating of ſigns, as the things ſignified by them do agree or diſagree one with another. The joining or ſepa-

ſeparating of ſigns, here meant, is what by another name we call propoſition. So that truth properly belongs only to propoſitions: whereof there are two ſorts, viz. mental and verbal; as there are two ſorts of ſigns commonly made uſe of, viz. ideas and words.

Which make mental or verbal propoſitions.

§. 3. To form a clear notion of truth, it is very neceſſary to conſider truth of thought, and truth of words, diſtinctly one from another: but yet it is very difficult to treat of them aſunder. Becauſe it is unavoidable, in treating of mental propoſitions, to make uſe of words: and then the inſtances given of mental propoſitions ceaſe immediately to be barely mental, and become verbal. For a mental propoſition being nothing but a bare conſideration of the ideas, as they are in our minds ſtripped of names, they loſe the nature of purely mental propoſitions as ſoon as they are put into words.

Mental propoſitions are very hard to be treated of.

§. 4. And that which makes it yet harder to treat of mental and verbal propoſitions ſeparately, is, that moſt men, if not all, in their thinking and reaſonings within themſelves, make uſe of words inſtead of ideas; at leaſt when the ſubject of their meditation contains in it complex ideas. Which is a great evidence of the imperfection and uncertainty of our ideas of that kind, and may, if attentively made uſe of, ſerve for a mark to ſhow us, what are thoſe things we have clear and perfect eſtabliſhed ideas of, and what not. For if we will curiouſly obſerve the way our mind takes in thinking and reaſoning, we ſhall find, I ſuppoſe, that when we make any propoſitions within our own thoughts about white or black, ſweet or bitter, a triangle or a circle, we can and often do frame in our minds the ideas themſelves, without reflecting on the names. But when we would conſider, or make propoſitions about the more complex ideas, as of a man, vitriol, fortitude, glory, we uſually put the name for the idea: becauſe the ideas theſe names ſtand for, being for the moſt part imperfect, confuſed, and undetermined, we reflect on the names themſelves, becauſe they are more clear, certain, and diſtinct, and readier occur to our thoughts than the pure ideas: and

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ſo we make uſe of theſe words inſtead of the ideas themſelves, even when we would meditate and reaſon within ourſelves, and make tacit mental propoſitions. In ſubſtances, as has been already noticed, this is occaſioned by the imperfection of our ideas: we making the name ſtand for the real eſſence, of which we have no idea at all. In modes, it is occaſioned by the great number of ſimple ideas, that go to the making them up. For many of them being compounded, the name occurs much eaſier than the complex idea itſelf, which requires time and attention to be recollected, and exactly repreſented to the mind, even in thoſe men who have formerly been at the pains to do it; and is utterly impoſſible to be done by thoſe, who, though they have ready in their memory the greateſt part of the common words of that language, yet perhaps never troubled themſelves in all their lives to conſider what preciſe ideas the moſt of them ſtood for. Some confuſed or obſcure notions have ſerved their turns, and many who talk very much of religion and conſcience, of church and faith, of power and right, of obſtructions and humours, melancholy and choler, would perhaps have little left in their thoughts and meditations, if one ſhould deſire them to think only of the things themſelves, and lay by thoſe words, with which they ſo often confound others, and not ſeldom themſelves alſo.

Being nothing but the joining or ſeparating ideas without words.

§. 5. But to return to the conſideration of truth: we muſt, I ſay, obſerve two ſorts of propoſitions that we are capable of making.

Firſt, mental, wherein the ideas in our underſtandings are without the uſe of words put together, or ſeparated by the mind, perceiving or judging of their agreement or diſagreement.

Secondly, verbal propoſitions, which are words, the ſigns of our ideas, put together or ſeparated in affirmative or negative ſentences. By which way of affirming or denying, theſe ſigns, made by ſounds, are as it were put together or ſeparated one from another. So that propoſition conſiſts in joining or ſeparating ſigns, and truth conſiſts in the putting together or ſeparating thoſe ſigns,

ſigns, according as the things, which they ſtand for, agree or diſagree.

When mental propoſitions contain real truth, and when verbal.

§. 6. Every one's experience will ſatisfy him, that the mind, either by perceiving or ſuppoſing the agreement or diſagreement of any of its ideas, does tacitly within itſelf put them into a kind of propoſition affirmative or negative, which I have endeavoured to expreſs by the terms putting together and ſeparating. But this action of the mind, which is ſo familiar to every thinking and reaſoning man, is eaſier to be conceived by reflecting on what paſſes in us when we affirm or deny, than to be explained by words. When a man has in his head the idea of two lines, viz. the ſide and diagonal of a ſquare, whereof the diagonal is an inch long, he may have the idea alſo of the diviſion of that line into a certain number of equal parts; v. g. into five, ten, an hundred, a thouſand, or any other number, and may have the idea of that inch line being diviſible, or not diviſible, into ſuch equal parts, as a certain number of them will be equal to the ſide-line. Now whenever he perceives, believes, or ſuppoſes ſuch a kind of diviſibility to agree or diſagree to his idea of that line, he, as it were, joins or ſeparates thoſe two ideas, viz. the idea of that line, and the idea of that kind of diviſibility; and ſo makes a mental propoſition, which is true or falſe, according as ſuch a kind of diviſibility, a diviſibility into ſuch aliquot parts, does really agree to that line or no. When ideas are ſo put together, or ſeparated in the mind, as they or the things they ſtand for do agree or not, that is, as I may call it, mental truth. But truth of words is ſomething more; and that is the affirming or denying of words one of another, as the ideas they ſtand for agree or diſagree: and this again is two-fold; either purely verbal and trifling, which I ſhall ſpeak of, chap. viii. or real and inſtructive, which is the object of that real knowledge which we have ſpoken of already.

Objection againſt verbal truth,

§. 7. But here again will be apt to occur the ſame doubt about truth, that did about knowledge: and it will be objected, that

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that thus it may all be chimerical.

if truth be nothing but the joining and separating of words in propositions, as the ideas they stand for agree or disagree in men's minds, the knowledge of truth is not so valuable a thing, as it is taken to be, nor worth the pains and time men employ in the search of it; since by this account it amounts to no more than the conformity of words to the chimeras of men's brains. Who knows not what odd notions many men's heads are filled with, and what strange ideas all men's brains are capable of? But if we rest here, we know the truth of nothing by this rule, but of the visionary words in our own imaginations; nor have other truth, but what as much concerns harpies and centaurs, as men and horses. For those, and the like, may be ideas in our heads, and have their agreement and disagreement there, as well as the ideas of real beings, and so have as true propositions made about them. And it will be altogether as true a proposition to say all centaurs are animals, as that all men are animals; and the certainty of one as great as the other. For in both the propositions, the words are put together according to the agreement of the ideas in our minds: and the agreement of the idea of animal with that of centaur is as clear and visible to the mind, as the agreement of the idea of animal with that of man; and so these two propositions are equally true, equally certain. But of what use is all such truth to us?

Answered, real truth is about ideas agreeing to things.

§. 8. Though what has been said in the foregoing chapter, to distinguish real from imaginary knowledge, might suffice here, in answer to this doubt, to distinguish real truth from chimerical, or (if you please) barely nominal, they depending both on the same foundation; yet it may not be amiss here again to consider, that though our words signify nothing but our ideas, yet being designed by them to signify things, the truth they contain, when put into propositions, will be only verbal, when they stand for ideas in the mind, that have not an agreement with the reality of things. And therefore truth, as well as knowledge, may well come under the distinction of verbal and real; that being only

only verbal truth, wherein terms are joined according to the agreement or disagreement of the ideas they stand for, without regarding whether our ideas are such as really have, or are capable of having an existence in nature. But then it is they contain real truth, when these signs are joined, as our ideas agree; and when our ideas are such as we know are capable of having an existence in nature: which in substances we cannot know, but by knowing that such have existed.

Falshood is the joining of names otherwise than their ideas agree.

§. 9. Truth is the marking down in words the agreement or disagreement of ideas as it is. Falshood is the marking down in words the agreement or disagreement of ideas otherwise than it is. And so far as these ideas, thus marked by sounds, agree to their archetypes, so far only is the truth real. The knowledge of this truth consists in knowing what ideas the words stand for, and the perception of the agreement or disagreement of those ideas, according as it is marked by those words.

General propositions to be treated of more at large.

§. 10. But because words are looked on as the great conduits of truth and knowledge, and that in conveying and receiving of truth, and commonly in reasoning about it, we make use of words and propositions; I shall more at large inquire, wherein the certainty of real truths, contained in propositions, consists, and where it is to be had; and endeavour to show in what sort of universal propositions we are capable of being certain of their real truth or falshood.

I shall begin with general propositions, as those which most employ our thoughts, and exercise our contemplation. General truths are most looked after by the mind, as those that most enlarge our knowledge; and by their comprehensiveness, satisfying us at once of many particulars, enlarge our view, and shorten our way to knowledge.

Moral and metaphysical truth.

§. 11. Besides truth taken in the strict sense before-mentioned, there are other sorts of truth; as, 1. Moral truth, which is speaking of things according to the persuasion of our own minds,

minds, though the proposition we speak agree not to the reality of things. 2. Metaphysical truth, which is nothing but the real existence of things, conformable to the ideas to which we have annexed their names. This, though it seems to consist in the very beings of things, yet, when considered a little nearly, will appear to include a tacit proposition, whereby the mind joins that particular thing to the idea it had before settled with a name to it. But these considerations of truth, either having been before taken notice of, or not being much to our present purpose, it may suffice here only to have mentioned them.

CHAP. VI.

Of Universal Propositions, their Truth and Certainty.

Treating of words necessary to knowledge.

§. 1. THOUGH the examining and judging of ideas by themselves, their names being quite laid aside, be the best and surest way to clear and distinct knowledge; yet, through the prevailing custom of using sounds for ideas, I think it is very seldom practised. Every one may observe how common it is for names to be made use of, instead of the ideas themselves, even when men think and reason within their own breasts; especially if the ideas be very complex, and made up of a great collection of simple ones. This makes the consideration of words and propositions so necessary a part of the treatise of knowledge, that it is very hard to speak intelligibly of the one, without explaining the other.

General truths hardly to be understood, but in verbal propositions.

§. 2. All the knowledge we have, being only of particular or general truths, it is evident that whatever may be done in the former of these, the latter, which is that which with reason is most sought after, can never be well made known, and is very seldom apprehended, but as conceived and expressed in words.

words. It is not therefore out of our way, in the examination of our knowledge, to inquire into the truth and certainty of univerſal propoſitions.

Certainty two-fold, of truth and of knowledge.

§. 3. But that we may not be miſled in this caſe, by that which is the danger every where, I mean by the doubtfulneſs of terms, it is fit to obſerve, that certainty is two-fold; certainty of truth, and certainty of knowledge. Certainty of truth is, when words are ſo put together in propoſitions, as exactly to expreſs the agreement or diſagreement of the ideas they ſtand for, as really it is. Certainty of knowledge is to perceive the agreement or diſagreement of ideas, as expreſſed in any propoſition. This we uſually call knowing, or being certain of the truth of any propoſition.

No propoſition can be known to be true, where the eſſence of each ſpecies mentioned is not known.

§. 4. Now becauſe we cannot be certain of the truth of any general propoſition, unleſs we know the preciſe bounds and extent of the ſpecies its terms ſtand for, it is neceſſary we ſhould know the eſſence of each ſpecies, which is that which conſtitutes and bounds it. This, in all ſimple ideas and modes, is not hard to do. For in theſe, the real and nominal eſſence being the ſame; or, which is all one, the abſtract idea which the general term ſtands for, being the ſole eſſence and boundary that is or can be ſuppoſed of the ſpecies; there can be no doubt, how far the ſpecies extends, or what things are comprehended under each term: which, it is evident, are all that have an exact conformity with the idea it ſtands for, and no other. But in ſubſtances wherein a real eſſence diſtinct from the nominal is ſuppoſed to conſtitute, determine, and bound the ſpecies, the extent of the general word is very uncertain: becauſe not knowing this real eſſence, we cannot know what is, or what is not of that ſpecies; and conſequently what may, or may not with certainty be affirmed of it. And thus ſpeaking of a man, or gold, or any other ſpecies of natural ſubſtances, as ſuppoſed conſtituted by a preciſe and real eſſence, which nature regularly imparts to every individual of that kind, whereby it is made to be of that ſpecies, we cannot be

certain of the truth of any affirmation or negation made of it. For man, or gold, taken in this sense, and used for species of things constituted by real essences, different from the complex idea in the mind of the speaker; stand for we know not what: and the extent of these species, with such boundaries, are so unknown and undetermined, that it is impossible with any certainty to affirm, that all men are rational, or that all gold is yellow. But where the nominal essence is kept to, as the boundary of each species, and men extend the application of any general term no farther than to the particular things, in which the complex idea it stands for is to be found, there they are in no danger to mistake the bounds of each species, nor can be in doubt, on this account, whether any propositions be true or no. I have chosen to explain this uncertainty of propositions in this scholastic way, and have made use of the terms of essences and species, on purpose to show the absurdity and inconvenience there is to think of them, as of any other sort of realities, than barely abstract ideas with names to them. To suppose that the species of things are any thing but the sorting of them under general names, according as they agree to several abstract ideas, of which we make those names the signs, is to confound truth, and introduce uncertainty into all general propositions that can be made about them. Though therefore these things might, to people not possessed with scholastic learning, be treated of in a better and clearer way; yet those wrong notions of essences or species having got root in most people's minds, who have received any tincture from the learning which has prevailed in this part of the world, are to be discovered and removed, to make way for that use of words which should convey certainty with it.

This more particularly concerns substances.

§. 5. The names of substances then, whenever made to stand for species, which are supposed to be constituted by real essences, which we know not, are not capable to convey certainty to the understanding: of the truth of general propositions made up of such terms, we cannot be sure. The reason whereof is plain: for how

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can we be ſure that this or that quality is in gold, when we know not what is or is not gold? Since in this way of ſpeaking nothing is gold, but what partakes of an eſſence, which we not knowing, cannot know where it is or is not, and ſo cannot be ſure that any parcel of matter in the world is or is not in this ſenſe gold; being incurably ignorant, whether it has or has not that which makes any thing to be called gold, i. e. that real eſſence of gold whereof we have no idea at all: this being as impoſſible for us to know, as it is for a blind man to tell in what flower the colour of a panſie is, or is not to be found, whilſt he has no idea of the colour of a panſie at all. Or if we could (which is impoſſible) certainly know where a real eſſence, which we know not, is; v. g. in what parcels of matter the real eſſence of gold is; yet could we not be ſure, that this or that quality could with truth be affirmed of gold: ſince it is impoſſible for us to know, that this or that quality or idea has a neceſſary connexion with a real eſſence, of which we have no idea at all, whatever ſpecies that ſuppoſed real eſſence may be imagined to conſtitute.

The truth of few univerſal propoſitions concerning ſubſtances is to be known.

§. 6. On the other ſide, the names of ſubſtances, when made uſe of as they ſhould be, for the ideas men have in their minds, though they carry a clear and determinate ſignification with them, will not yet ſerve us to make many univerſal propoſitions, of whoſe truth we can be certain. Not becauſe in this uſe of them we are uncertain what things are ſignified by them, but becauſe the complex ideas they ſtand for are ſuch combinations of ſimple ones, as carry not with them any diſcoverable connexion or repugnancy, but with a very few other ideas.

Becauſe co-exiſtence of ideas in few caſes is to be known.

§. 7. The complex ideas, that our names of the ſpecies of ſubſtances properly ſtand for, are collections of ſuch qualities as have been obſerved to co-exiſt in an unknown ſubſtratum, which we call ſubſtance: but what other qualities neceſſarily co-exiſt with ſuch combinations, we cannot certainly know, unleſs we can diſcover their natural dependence; which in their primary

qualities, we can go but a very little way in; and in all their ſecondary qualities, we can diſcover no connexion at all, for the reaſons mentioned, chap. iii. viz. 1. Becauſe we know not the real conſtitutions of ſubſtances, on which each ſecondary quality particularly depends. 2. Did we know that, it would ſerve us only for experimental (not univerſal) knowledge; and reach with certainty no farther, than that bare inſtance: becauſe our underſtandings can diſcover no conceivable connexion between any ſecondary quality and any modification whatſoever of any of the primary ones. And therefore there are very few general propoſitions to be made concerning ſubſtances, which can carry with them undoubted certainty.

Inſtance in gold.

§. 8. All gold is fixed, is a propoſition whoſe truth we cannot be certain of, how univerſally ſoever it be believed. For if, according to the uſeleſs imagination of the ſchools, any one ſuppoſes the term gold to ſtand for a ſpecies of things ſet out by nature, by a real eſſence belonging to it, it is evident he knows not what particular ſubſtances are of that ſpecies; and ſo cannot, with certainty, affirm any thing univerſally of gold. But if he makes gold ſtand for a ſpecies determined by its nominal eſſence, let the nominal eſſence, for example, be the complex idea of a body of a certain yellow colour, malleable, fuſible, and heavier than any other known; in this proper uſe of the word gold, there is no difficulty to know what is or is not gold. But yet no other quality can with certainty be univerſally affirmed or denied of gold, but what hath a diſcoverable connexion or inconſiſtency with that nominal eſſence. Fixedneſs, for example, having no neceſſary connexion, that we can diſcover, with the colour, weight, or any other ſimple idea of our complex one, or with the whole combination together; it is impoſſible that we ſhould certainly know the truth of this propoſition, that all gold is fixed.

§. 9. As there is no diſcoverable connexion between fixedneſs and the colour, weight, and other ſimple ideas of that nominal eſſence of gold; ſo if we make our complex idea of gold a body yellow, fuſible, ductile, weighty, and

and fixed, we ſhall be at the ſame uncertainty concerning ſolubility in aq. regia, and for the ſame reaſon: ſince we can never, from conſideration of the ideas themſelves, with certainty affirm or deny of a body, whoſe complex idea is made up of yellow, very weighty, ductile, fuſible, and fixed, that it is ſoluble in aqua regia; and ſo on, of the reſt of its qualities. I would gladly meet with one general affirmation concerning any quality of gold, that any one can certainly know is true. It will, no doubt, be preſently objected, is not this an univerſal propoſition, "all gold is malleable?" To which I anſwer, it is a very certain propoſition, if malleableneſs be a part of the complex idea the word gold ſtands for. But then here is nothing affirmed of gold, but that that ſound ſtands for an idea in which malleableneſs is contained: and ſuch a ſort of truth and certainty as this, it is to ſay a centaur is four-footed. But if malleableneſs makes not a part of the ſpecific eſſence the name of gold ſtands for, it is plain, "all gold is malleable" is not a certain propoſition. Becauſe let the complex idea of gold be made up of which ſoever of its other qualities you pleaſe, malleableneſs will not appear to depend on that complex idea, nor follow from any ſimple one contained in it: the connexion that malleableneſs has (if it has any) with thoſe other qualities, being only by the intervention of the real conſtitution of its inſenſible parts; which, ſince we know not, it is impoſſible we ſhould perceive that connexion, unleſs we could diſcover that which ties them together.

§. 10. The more, indeed, of theſe coexiſting qualities we unite into one complex idea, under one name, the more preciſe and determinate we make the ſignification of that word; but never yet make it thereby more capable of univerſal certainty, in reſpect of other qualities not contained in our complex idea; ſince we perceive not their connexion or dependence on one another, being ignorant both of that real conſtitution in which they are all founded, and alſo how they flow from it. For the chief part of our knowledge con-

As far as any ſuch co-exiſtence can be known, ſo far univerſal propoſitions may be certain. But this will go but a little way, becauſe

cerning substances is not, as in other things, barely of the relation of two ideas that may exist separately; but is of the necessary connexion and co-existence of several distinct ideas in the same subject, or of their repugnancy so to co-exist. Could we begin at the other end, and discover what it was, wherein that colour consisted, what made a body lighter or heavier, what texture of parts made it malleable, fusible, and fixed, and fit to be dissolved in this sort of liquor, and not in another; if (I say) we had such an idea as this of bodies, and could perceive wherein all sensible qualities originally consist, and how they are produced; we might frame such ideas of them, as would furnish us with matter of more general knowledge, and enable us to make universal propositions, that should carry general truth and certainty with them. But whilst our complex ideas of the sorts of substances are so remote from that internal real constitution, on which their sensible qualities depend, and are made up of nothing but an imperfect collection of those apparent qualities our senses can discover; there can be few general propositions concerning substances, of whose real truth we can be certainly assured: since there are but few simple ideas, of whose connexion and necessary co-existence we can have certain and undoubted knowledge. I imagine, amongst all the secondary qualities of substances, and the powers relating to them, there cannot any two be named, whose necessary co-existence, or repugnance to co-exist, can certainly be known, unless in those of the same sense, which necessarily exclude one another, as I have elsewhere showed. No one, I think, by the colour that is in any body, can certainly know what smell, taste, sound, or tangible qualities it has, nor what alterations it is capable to make or receive, on or from other bodies. The same may be said of the sound or taste, &c. Our specific names of substances standing for any collections of such ideas, it is not to be wondered, that we can with them make very few general propositions of undoubted real certainty. But yet so far as any complex idea, of any sort of substances, contains in it any simple idea, whose necessary co-existence with any other may be discovered,

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ſo far univerſal propoſitions may with certainty be made concerning it: v. g. could any one diſcover a neceſſary connexion between malleableneſs, and the colour or weight of gold, or any other part of the complex idea ſignified by that name, he might make a certain univerſal propoſition concerning gold in this reſpect; and the real truth of this propoſition, "that all gold is malleable," would be as certain as of this, "the three angles of all "right-lined triangles are all equal to two right ones."

The qualities which make our complex ideas of ſubſtances, depend moſtly on external, remote, and unperceived cauſes.

§. 11. Had we ſuch ideas of ſubſtances, as to know what real conſtitutions produce thoſe ſenſible qualities we find in them, and how thoſe qualities flowed from thence, we could, by the ſpecific ideas of their real eſſences in our own minds, more certainly find out their properties, and diſcover what qualities they had or had not, than we can now by our ſenſes: and to know the properties of gold, it would be no more neceſſary that gold ſhould exiſt, and that we ſhould make experiments upon it, than it is neceſſary for the knowing the properties of a triangle, that a triangle ſhould exiſt in any matter; the idea in our minds would ſerve for the one as well as the other. But we are ſo far from being admitted into the ſecrets of nature, that we ſcarce ſo much as ever approach the firſt entrance towards them. For we are wont to conſider the ſubſtances we meet with, each of them as an entire thing by itſelf, having all its qualities in itſelf, and independent of other things; overlooking, for the moſt part, the operations of thoſe inviſible fluids they are encompaſſed with, and upon whoſe motions and operations depend the greateſt part of thoſe qualities which are taken notice of in them, and are made by us the inherent marks of diſtinction whereby we know and denominate them. Put a piece of gold any where by itſelf, ſeparate from the reach and influence of all other bodies, it will immediately loſe all its colour and weight, and perhaps malleableneſs too; which, for aught I know, would be changed into a perfect friability. Water, in which to us fluidity is an eſſential quality, left to itſelf, would ceaſe to be fluid. But if inanimate

bodies owe so much of their present state to other bodies without them, that they would not be what they appear to us, were those bodies that environ them removed; it is yet more so in vegetables, which are nourished, grow, and produce leaves, flowers, and seeds, in a constant succession. And if we look a little nearer into the state of animals, we shall find that their dependence, as to life, motion, and the most considerable qualities to be observed in them, is so wholly on extrinsical causes and qualities of other bodies that make no part of them, that they cannot subsist a moment without them: though yet those bodies on which they depend, are little taken notice of, and make no part of the complex ideas we frame of those animals. Take the air but for a minute from the greatest part of living creatures, and they presently lose sense, life, and motion. This the necessity of breathing has forced into our knowledge. But how many other extrinsical, and possibly very remote bodies, do the springs of these admirable machines depend on, which are not vulgarly observed, or so much as thought on; and how many are there, which the severest inquiry can never discover? The inhabitants of this spot of the universe, though removed so many millions of miles from the sun, yet depend so much on the duly tempered motion of particles coming from, or agitated by it, that were this earth removed but a small part of the distance out of its present situation, and placed a little farther or nearer that source of heat, it is more than probable that the greatest part of the animals in it would immediately perish: since we find them so often destroyed by an excess or defect of the sun's warmth, which an accidental position, in some parts of this our little globe, exposes them to. The qualities observed in a loadstone must needs have their source far beyond the confines of that body; and the ravage made often on several sorts of animals by invisible causes, the certain death (as we are told) of some of them, by barely passing the line, or, as it is certain of other, by being removed into a neighbouring country; evidently show that the concurrence and operations of several bodies, with which they are seldom thought to have any thing

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to do, is abſolutely neceſſary to make them be what they appear to us, and to preſerve thoſe qualities by which we know and diſtinguiſh them. We are then quite out of the way, when we think that things contain within themſelves the qualities that appear to us in them: and we in vain ſearch for that conſtitution within the body of a fly, or an elephant, upon which depend thoſe qualities and powers we obſerve in them. For which perhaps, to underſtand them aright, we ought to look not only beyond this our earth and atmoſphere, but even beyond the ſun, or remoteſt ſtar our eyes have yet diſcovered. For how much the being and operation of particular ſubſtances in this our globe depends on cauſes utterly beyond our view, is impoſſible for us to determine. We ſee and perceive ſome of the motions and groſſer operations of things here about us; but whence the ſtreams come that keep all theſe curious machines in motion and repair, how conveyed and modified, is beyond our notice and apprehenſion: and the great parts and wheels, as I may ſo ſay, of this ſtupendous ſtructure of the univerſe, may, for aught we know, have ſuch a connexion and dependence in their influences and operations one upon another, that perhaps things in this our manſion would put on quite another face, and ceaſe to be what they are, if ſome one of the ſtars or great bodies, incomprehenſibly remote from us, ſhould ceaſe to be or move as it does. This is certain, things however abſolute and entire they ſeem in themſelves, are but retainers to other parts of nature, for that which they are moſt taken notice of by us. Their obſervable qualities, actions, and powers, are owing to ſomething without them; and there is not ſo complete and perfect a part that we know of nature, which does not owe the being it has, and the excellencies of it, to its neighbours; and we muſt not confine our thoughts within the ſurface of any body, but look a great deal farther, to comprehend perfectly thoſe qualities that are in it.

§. 12. If this be ſo, it is not to be wondered, that we have very imperfect ideas of ſubſtances; and that the real eſſences, on which depend their properties and ope-

operations, are unknown to us. We cannot diſcover ſo much as that ſize, figure, and texture of their minute and active parts, which is really in them; much leſs the different motions and impulſes made in and upon them by bodies from without, upon which depends, and by which is formed, the greateſt and moſt remarkable part of thoſe qualities we obſerve in them, and of which our complex ideas of them are made up. This conſideration alone is enough to put an end to all our hopes of ever having the ideas of their real eſſences; which whilſt we want, the nominal eſſences we make uſe of inſtead of them will be able to furniſh us but very ſparingly with any general knowledge, or univerſal propoſitions capable of real certainty.

Judgment may reach farther, but that is not knowledge.

§. 13. We are not therefore to wonder, if certainty be to be found in very few general propoſitions made concerning ſubſtances: our knowledge of their qualities and properties goes very ſeldom farther than our ſenſes reach and inform us. Poſſibly inquiſitive and obſerving men may, by ſtrength of judgment, penetrate farther, and on probabilities taken from wary obſervation, and hints well laid together, often gueſs right at what experience has not yet diſcovered to them. But this is but gueſſing ſtill; it amounts only to opinion, and has not that certainty which is requiſite to knowledge. For all general knowledge lies only in our own thoughts, and conſiſts barely in the contemplation of our own abſtract ideas. Wherever we perceive any agreement or diſagreement amongſt them, there we have general knowledge; and, by putting the names of thoſe ideas together accordingly in propoſitions, can with certainty pronounce general truths. But becauſe the abſtract ideas of ſubſtances, for which their ſpecific names ſtand, whenever they have any diſtinct and determinate ſignification, have a diſcoverable connexion or inconſiſtency with but a very few other ideas; the certainty of univerſal propoſitions concerning ſubſtances is very narrow and ſcanty in that part, which is our principal inquiry concerning them: and there are ſcarce any of the names of ſubſtances, let the idea it is applied

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to be what it will, of which we can generally and with certainty pronounce, that it has or has not this or that other quality belonging to it, and constantly co-existing or inconsistent with that idea, wherever it is to be found.

What is requisite for our knowledge of substances.

§. 14. Before we can have any tolerable knowledge of this kind, we must first know what changes the primary qualities of one body do regularly produce in the primary qualities of another, and how. Secondly, we must know what primary qualities of any body produce certain sensations or ideas in us. This is in truth no less than to know all the effects of matter, under its divers modifications of bulk, figure, cohesion of parts, motion and rest. Which, I think every body will allow, is utterly impossible to be known by us without revelation. Nor if it were revealed to us, what sort of figure, bulk, and motion of corpuscles, would produce in us the sensation of a yellow colour, and what sort of figure, bulk, and texture of parts, in the superficies of any body, were fit to give such corpuscles their due motion to produce that colour; would that be enough to make universal propositions with certainty, concerning the several sorts of them, unless we had faculties acute enough to perceive the precise bulk, figure, texture, and motion of bodies in those minute parts, by which they operate on our senses, so that we might by those frame our abstract ideas of them. I have mentioned here only corporeal substances, whose operations seem to lie more level to our understandings: for as to the operations of spirits, both their thinking and moving of bodies, we at first sight find ourselves at a loss; though perhaps, when we have applied our thoughts a little nearer to the consideration of bodies, and their operations, and examined how far our notions, even in these, reach, with any clearness, beyond sensible matter of fact, we shall be bound to confess, that even in these too our discoveries amount to very little beyond perfect ignorance and incapacity.

Whilst our ideas of substances con-

§. 15. This is evident, the abstract complex ideas of substances, for which their general names stand, not comprehending their

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tain not their real constitutions, we can make but few general certain propositions concerning them.

real constitutions, can afford us very little universal certainty. Because our ideas of them are not made up of that, on which those qualities we observe in them, and would inform ourselves about, do depend, or with which they have any certain connexion: v. g. let the ideas to which we give the name man, be, as it commonly is, a body of the ordinary shape, with sense, voluntary motion, and reason joined to it. This being the abstract idea, and consequently the essence of our species man, we can make but very few general certain propositions concerning man, standing for such an idea. Because not knowing the real constitution on which sensation, power of motion, and reasoning, with that peculiar shape, depend, and whereby they are united together in the same subject, there are very few other qualities, with which we can perceive them to have a necessary connexion: and therefore we cannot with certainty affirm, that all men sleep by intervals; that no man can be nourished by wood or stones; that all men will be poisoned by hemlock: because these ideas have no connexion nor repugnancy with this our nominal essence of man, with this abstract idea that name stands for. We must, in these and the like, appeal to trial in particular subjects, which can reach but a little way. We must content ourselves with probability in the rest; but can have no general certainty, whilst our specific idea of man contains not that real constitution, which is the root, wherein all his inseparable qualities are united, and from whence they flow. Whilst our idea, the word man stands for, is only an imperfect collection of some sensible qualities and powers in him, there is no discernible connexion or repugnance between our specific idea, and the operation of either the parts of hemlock or stones, upon his constitution. There are animals that safely eat hemlock, and others that are nourished by wood and stones: but as long as we want ideas of those real constitutions of different sorts of animals, whereon these and the like qualities and powers depend, we must not hope to reach certainty in universal propositions

poſitions concerning them. Thoſe few ideas only, which have a diſcernible connexion with our nominal eſſence, or any part of it, can afford us ſuch propoſitions. But theſe are ſo few, and of ſo little moment, that we may juſtly look on our certain general knowledge of ſubſtances, as almoſt none at all.

Wherein lies the general certainty of propoſitions.

§. 16. To conclude, general propoſitions, of what kind ſoever, are then only capable of certainty, when the terms uſed in them ſtand for ſuch ideas, whoſe agreement or diſagreement, as there expreſſed, is capable to be diſcovered by us. And we are then certain of their truth or falſhood, when we perceive the ideas the terms ſtand for to agree or not agree, according as they are affirmed or denied one of another. Whence we may take notice, that general certainty is never to be found but in our ideas. Whenever we go to ſeek it elſewhere in experiment, or obſervations without us, our knowledge goes not beyond particulars. It is the contemplation of our own abſtract ideas that alone is able to afford us general knowledge.

CHAP. VII.

Of Maxims.

They are ſelf-evident.

§. 1. THERE are a ſort of propoſitions, which under the name of maxims and axioms have paſſed for principles of ſcience; and becauſe they are ſelf-evident, have been ſuppoſed innate, although no-body (that I know) ever went about to ſhow the reaſon and foundation of their clearneſs or cogency. It may however be worth while to inquire into the reaſon of their evidence, and ſee whether it be peculiar to them alone, and alſo examine how far they influence and govern our other knowledge.

Wherein that ſelf-evidence conſiſts.

§. 2. Knowledge, as has been ſhown, conſiſts in the perception of the agreement or diſagreement of ideas: now where that

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agreement or disagreement is perceived immediately by itself, without the intervention or help of any other, there our knowledge is self-evident. This will appear to be so to any one, who will but consider any of those propositions, which, without any proof, he assents to at first sight: for in all of them he will find, that the reason of his assent is from that agreement or disagreement, which the mind, by an immediate comparing them, finds in those ideas answering the affirmation or negation in the proposition.

Self-evidence not peculiar to received axioms.

§. 3. This being so, in the next place let us consider, whether this self-evidence be peculiar only to those propositions, which commonly pass under the name of maxims, and have the dignity of axioms allowed them. And here it is plain, that several other truths, not allowed to be axioms, partake equally with them in this self-evidence. This we shall see, if we go over these several sorts of agreement or disagreement of ideas, which I have abovementioned, viz. identity, relation, co-existence, and real existence; which will discover to us, that not only those few propositions, which have had the credit of maxims, are self-evident, but a great many, even almost an infinite number of other propositions are such.

1. As to identity and diversity, all propositions are equally self-evident.

§. 4. For, first the immediate perception of the agreement or disagreement of identity, being founded in the mind's having distinct ideas, this affords us as many self-evident propositions, as we have distinct ideas. Every one that has any knowledge at all, has, as the foundation of it, various and distinct ideas: and it is the first act of the mind (without which it can never be capable of any knowledge) to know every one of its ideas by itself, and distinguish it from others. Every one finds in himself, that he knows the ideas he has; that he knows also, when any one is in his understanding, and what it is; and that when more than one are there, he knows them distinctly and unconfusedly one from another. Which always being so (it being impossible but that he should perceive what he perceives) he can never be in doubt when any idea

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is in his mind, that it is there, and is that idea it is; and that two diſtinct ideas, when they are in his mind, are there, and are not one and the ſame idea. So that all ſuch affirmations and negations are made without any poſſibility of doubt, uncertainty, or heſitation, and muſt neceſſarily be aſſented to as ſoon as underſtood; that is, as ſoon as we have in our minds determined ideas, which the terms in the propoſition ſtand for. And therefore whenever the mind with attention conſiders any propoſition, ſo as to perceive the two ideas ſignified by the terms, and affirmed or denied one of the other, to be the ſame or different; it is preſently and infallibly certain of the truth of ſuch a propoſition, and this equally, whether theſe propoſitions be in terms ſtanding for more general ideas, or ſuch as are leſs ſo, v. g. whether the general idea of being be affirmed of itſelf, as in this propoſition, whatſoever is, is; or a more particular idea be affirmed of itſelf, as a man is a man; or, whatſoever is white is white; or whether the idea of being in general be denied of not being, which is the only (if I may ſo call it) idea different from it, as in this other propoſition, it is impoſſible for the ſame thing to be, and not to be; or any idea of any particular being be denied of another different from it, as, a man is not a horſe; red is not blue. The difference of the ideas, as ſoon as the terms are underſtood, makes the truth of the propoſition preſently viſible, and that with an equal certainty and eaſineſs in the leſs as well as the more general propoſitions, and all for the ſame reaſon, viz. becauſe the mind perceives, in any ideas that it has, the ſame idea to be the ſame with itſelf; and two different ideas to be different, and not the ſame. And this it is equally certain of, whether theſe ideas be more or leſs general, abſtract, and comprehenſive. It is not therefore alone to theſe two general propoſitions, whatſoever is, is; and it is impoſſible for the ſame thing to be, and not to be; that this ſort of ſelf-evidence belongs by any peculiar right. The perception of being, or not being, belongs no more to theſe vague ideas, ſignified by the terms whatſoever and thing, than it does to any other ideas. Theſe two general maxims, amounting to no more in

ſhort but this, that the ſame is the ſame, and ſame is not different, are truths known in more particular inſtances, as well as in thoſe general maxims, and known alſo in particular inſtances, before theſe general maxims are ever thought on, and draw all their force from the diſcernment of the mind employed about particular ideas. There is nothing more viſible than that the mind, without the help of any proof, or reflection on either of theſe general propoſitions, perceives ſo clearly, and knows ſo certainly, that the idea of white is the idea of white, and not the idea of blue; and that the idea of white, when it is in the mind, is there, and is not abſent; that the conſideration of theſe axioms can add nothing to the evidence or certainty of its knowledge. Juſt ſo it is (as every one may experiment in himſelf) in all the ideas a man has in his mind: he knows each to be itſelf, and not to be another; and to be in his mind, and not away when it is there, with a certainty that cannot be greater; and therefore the truth of no general propoſition can be known with a greater certainty, nor add any thing to this. So that in reſpect of identity, our intuitive knowledge reaches as far as our ideas. And we are capable of making as many ſelf-evident propoſitions, as we have names for diſtinct ideas. And I appeal to every one's own mind, whether this propoſition, A circle is a circle, be not as ſelf-evident a propoſition, as that conſiſting of more general terms, whatſoever is, is; and again, whether this propoſition, blue is not red, be not a propoſition that the mind can no more doubt of, as ſoon as it underſtands the words, than it does of that axiom, It is impoſſible for the ſame thing to be, and not to be; and ſo of all the like.

2. In co-exiſtence we have few ſelf-evident propoſitions.

§. 5. Secondly, as to co-exiſtence, or ſuch neceſſary connexion between two ideas, that, in the ſubject where one of them is ſuppoſed, there the other muſt neceſſarily be alſo: of ſuch agreement or diſagreement as this, the mind has an immediate perception but in very few of them. And therefore in this ſort we have but very little intuitive knowledge; nor are there to be

found very many propoſitions that are ſelf-evident, though ſome there are; v. g. the idea of filling a place equal to the contents of its ſuperficies, being annexed to our idea of body, I think it is a ſelf-evident propoſition, that two bodies cannot be in the ſame place.

3. In other relations we may have.

§. 6. Thirdly, as to the relations of modes, mathematicians have framed many axioms concerning that one relation of equality. As, equals taken from equals, the remainder will be equal; which, with the reſt of that kind, however they are received for maxims by the mathematicians, and are unqueſtionable truths; yet, I think, that any one who conſiders them will not find, that they have a clearer ſelf-evidence than theſe, that one and one are equal to two; that if you take from the five fingers of one hand two, and from the five fingers of the other hand two, the remaining numbers will be equal. Theſe and a thouſand other ſuch propoſitions may be found in numbers, which, at the very firſt hearing, force the aſſent, and carry with them an equal, if not greater clearneſs, than thoſe mathematical axioms.

4. Concerning real exiſtence we have none.

§. 7. Fourthly, as to real exiſtence, ſince that has no connexion with any other of our ideas, but that of ourſelves, and of a firſt being, we have in that, concerning the real exiſtence of all other beings, not ſo much as demonſtrative, much leſs a ſelf-evident knowledge; and therefore concerning thoſe there are no maxims.

Theſe axioms do not much influence our other knowledge.

§. 8. In the next place let us conſider, what influence theſe received maxims have upon the other parts of our knowledge. The rules eſtabliſhed in the ſchools, that all reaſonings are "ex præcognitis & præconceſſis," ſeem to lay the foundation of all other knowledge in theſe maxims, and to ſuppoſe them to be præcognita; whereby, I think, are meant theſe two things: firſt, that theſe axioms are thoſe truths that are firſt known to the mind. And, ſecondly, that upon them the other parts of our knowledge depend.

Becauſe they are not the truths we firſt knew.

§. 9. Firſt, that they are not the truths firſt known to the mind is evident to experience, as we have ſhown in another place, book i. chap. ii. Who perceives not that a child certainly knows that a ſtranger is not its mother; that its ſucking-bottle is not the rod, long before he knows that it is impoſſible for the ſame thing to be and not to be? And how many truths are there about numbers, which it is obvious to obſerve, that the mind is perfectly acquainted with, and fully convinced of, before it ever thought on theſe general maxims, to which mathematicians, in their arguings, do ſometimes refer them? Whereof the reaſon is very plain: for that which makes the mind aſſent to ſuch propoſitions, being nothing elſe but the perception it has of the agreement or diſagreement of its ideas, according as it finds them affirmed or denied one of another, in words it underſtands; and every idea being known to be what it is, and every two diſtinct ideas being known not to be the ſame; it muſt neceſſarily follow, that ſuch ſelf-evident truths muſt be firſt known, which conſiſt of ideas that are firſt in the mind: and the ideas firſt in the mind, it is evident, are thoſe of particular things, from whence, by ſlow degrees, the underſtanding proceeds to ſome few general ones; which being taken from the ordinary and familiar objects of ſenſe, are ſettled in the mind, with general names to them. Thus particular ideas are firſt received and diſtinguiſhed, and ſo knowledge got about them; and next to them, the leſs general or ſpecific, which are next to particular: for abſtract ideas are not ſo obvious or eaſy to children, or the yet unexerciſed mind, as particular ones. If they ſeem ſo to grown men, it is only becauſe by conſtant and familiar uſe they are made ſo. For when we nicely reflect upon them, we ſhall find, that general ideas are fictions and contrivances of the mind, that carry difficulty with them, and do not ſo eaſily offer themſelves, as we are apt to imagine. For example, does it not require ſome pains and ſkill to form the general idea of a triangle (which is yet none of the moſt abſtract, comprehenſive, and difficult), for it muſt be neither oblique, nor rectangle,

angle, neither equilateral, equicrural, nor ſcalenon; but all and none of theſe at once. In effect, it is ſomething imperfect, that cannot exiſt; an idea wherein ſome parts of ſeveral different and inconſiſtent ideas are put together. It is true, the mind, in this imperfect ſtate, has need of ſuch ideas, and makes all the haſte to them it can, for the conveniency of communication and enlargement of knowledge; to both which it is naturally very much inclined. But yet one has reaſon to ſuſpect ſuch ideas are marks of our imperfection; at leaſt this is enough to ſhow, that the moſt abſtract and general ideas are not thoſe that the mind is firſt and moſt eaſily acquainted with, not ſuch as its earlieſt knowledge is converſant about.

Becauſe on them the other parts of our knowledge do not depend.

§. 10. Secondly, from what has been ſaid it plainly follows, that theſe magnified maxims are not the principles and foundations of all our other knowledge. For if there be a great many other truths, which have as much ſelf-evidence as they, and a great many that we know before them, it is impoſſible they ſhould be the principles, from which we deduce all other truths. Is it impoſſible to know that one and two are equal to three, but by virtue of this, or ſome ſuch axiom, viz. the whole is equal to all its parts taken together? Many a one knows that one and two are equal to three, without having heard, or thought on that, or any other axiom, by which it might be proved: and knows it as certainly, as any other man knows, that the whole is equal to all its parts, or any other maxim, and all from the ſame reaſon of ſelf-evidence; the equality of thoſe ideas being as viſible and certain to him without that, or any other axiom, as with it, it needing no proof to make it perceived. Nor after the knowledge, that the whole is equal to all its parts, does he know that one and two are equal to three, better or more certainly than he did before. For if there be any odds in thoſe ideas, the whole and parts are more obſcure, or at leaſt more difficult to be ſettled in the mind, than thoſe of one, two, and three. And indeed, I think, I may aſk theſe men, who will needs have all knowledge, beſides

thoſe general principles themſelves, to depend on general, innate, and ſelf-evident principles: what principle is requiſite to prove, that one and one are two, that two and two are four, that three times two are ſix? Which being known without any proof, do evince, that either all knowledge does not depend on certain præcognita or general maxims, called principles, or elſe that theſe are principles; and if theſe are to be counted principles, a great part of numeration will be ſo. To which if we add all the ſelf-evident propoſitions, which may be made about all our diſtinct ideas, principles will be almoſt infinite, at leaſt innumerable, which men arrive to the knowledge of, at different ages; and a great many of theſe innate principles they never come to know all their lives. But whether they come in view of the mind, earlier or later, this is true of them, that they are all known by their native evidence, are wholly independent, receive no light, nor are capable of any proof one from another; much leſs the more particular, from the more general; or the more ſimple, from the more compounded: the more ſimple, and leſs abſtract, being the moſt familiar, and the eaſier and earlier apprehended. But which ever be the cleareſt ideas, the evidence and certainty of all ſuch propoſitions is in this, that a man ſees the ſame idea to be the ſame idea, and infallibly perceives two different ideas to be different ideas. For when a man has in his underſtanding the ideas of one and of two, the idea of yellow, and the idea of blue, he cannot but certainly know, that the idea of one is the idea of one, and not the idea of two; and that the idea of yellow is the idea of yellow, and not the idea of blue. For a man cannot confound the ideas in his mind, which he has diſtinct: that would be to have them confuſed and diſtinct at the ſame time, which is a contradiction: and to have none diſtinct is to have no uſe of our faculties, to have no knowledge at all. And therefore what idea ſoever is affirmed of itſelf, or whatſoever two entire diſtinct ideas are denied one of another, the mind cannot but aſſent to ſuch a propoſition as infallibly true, as ſoon as it underſtands the terms, without heſitation or need

need of proof, or regarding thoſe made in more general terms, and called maxims.

What uſe theſe general maxims have.

§. 11. What ſhall we then ſay? Are theſe general maxims of no uſe? By no means; though perhaps their uſe is not that, which it is commonly taken to be. But ſince doubting in the leaſt of what hath been by ſome men aſcribed to theſe maxims may be apt to be cried out againſt, as overturning the foundations of all the ſciences; it may be worth while to conſider them, with reſpect to other parts of our knowledge, and examine more particularly to what purpoſes they ſerve, and to what not.

1. It is evident from what has been already ſaid, that they are of no uſe to prove or confirm leſs general ſelf-evident propoſitions.

2. It is as plain that they are not, nor have been the foundations whereon any ſcience hath been built. There is, I know, a great deal of talk, propagated from ſcholaſtic men, of ſciences and the maxims on which they are built: but it has been my ill luck never to meet with any ſuch ſciences; much leſs any one built upon theſe two maxims, what is, is; and it is impoſſible for the ſame thing to be, and not to be. And I would be glad to be ſhown where any ſuch ſcience, erected upon theſe, or any other general axioms, is to be found: and ſhould be obliged to any one who would lay before me the frame and ſyſtem of any ſcience ſo built on theſe or any ſuch-like maxims, that could not be ſhown to ſtand as firm without any conſideration of them. I aſk, whether theſe general maxims have not the ſame uſe in the ſtudy of divinity, and in theological queſtions, that they have in other ſciences? They ſerve here too to ſilence wranglers, and put an end to diſpute. But I think that nobody will therefore ſay, that the chriſtian religion is built upon theſe maxims, or that the knowledge we have of it is derived from theſe principles. It is from revelation we have received it, and without revelation theſe maxims had never been able to help us to it. When we find out an idea, by whoſe intervention we diſcover the connexion of two others, this is a revelation from

God to us, by the voice of reaſon. For we then come to know a truth that we did not know before. When God declares any truth to us, this is a revelation to us by the voice of his ſpirit, and we are advanced in our knowledge. But in neither of theſe do we receive our light or knowledge from maxims. But in the one the things themſelves afford it, and we ſee the truth in them by perceiving their agreement or diſagreement. In the other, God himſelf affords it immediately to us, and we ſee the truth of what he ſays in his unerring veracity.

3. They are not of uſe to help men forward in the advancement of ſciences, or new diſcoveries of yet unknown truths. Mr. Newton, in his never enough to be admired book, has demonſtrated ſeveral propoſitions, which are ſo many new truths, before unknown to the world, and are farther advances in mathematical knowledge: but, for the diſcovery of theſe, it was not the general maxims, what is, is; or, the whole is bigger than a part; or the like; that helped him. Theſe were not the clues that led him into the diſcovery of the truth and certainty of thoſe propoſitions. Nor was it by them that he got the knowledge of thoſe demonſtrations; but by finding out intermediate ideas, that ſhowed the agreement or diſagreement of the ideas, as expreſſed in the propoſitions he demonſtrated. This is the greateſt exerciſe and improvement of human underſtanding in the enlarging of knowledge, and advancing the ſciences; wherein they are far enough from receiving any help from the contemplation of theſe, or the like magnified maxims. Would thoſe who have this traditional admiration of theſe propoſitions, that they think no ſtep can be made in knowledge without the ſupport of an axiom, no ſtone laid in the building of the ſciences without a general maxim, but diſtinguiſh between the method of acquiring knowledge, and of communicating; between the method of raiſing any ſcience and that of teaching it to others as far as it is advanced; they would ſee that thoſe general maxims were not the foundations on which the firſt diſcoverers raiſed their admirable ſtructures, nor the keys that unlocked and opened thoſe ſecrets of knowledge. Though afterwards, when ſchools were erected,

erected, and sciences had their professors to teach what others had found out, they often made use of maxims, i. e. laid down certain propositions which were self-evident, or to be received for true; which being settled in the minds of their scholars, as unquestionable verities, they on occasion made use of, to convince them of truths in particular instances that were not so familiar to their minds as those general axioms which had before been inculcated to them, and carefully settled in their minds. Though these particular instances, when well reflected on, are no less self-evident to the understanding than the general maxims brought to confirm them: and it was in those particular instances that the first discoverer found the truth, without the help of the general maxims: and so may any one else do, who with attention considers them.

To come therefore to the use that is made of maxims.

1. They are of use, as has been observed, in the ordinary methods of teaching sciences as far as they are advanced; but of little or none in advancing them farther.

2. They are of use in disputes, for the silencing of obstinate wranglers, and bringing those contests to some conclusion. Whether a need of them to that end came not in, in the manner following, I crave leave to inquire. The schools having made disputation the touchstone of men's abilities, and the criterion of knowledge, adjudged victory to him that kept the field: and he that had the last word, was concluded to have the better of the argument, if not of the cause. But because by this means there was like to be no decision between skilful combatants, whilst one never failed of a medius terminus to prove any proposition; and the other could as constantly, without, or with a distinction, deny the major or minor; to prevent, as much as could be, running out of disputes into an endless train of syllogisms, certain general propositions, most of them indeed self-evident, were introduced into the schools; which being such as all men allowed and agreed in, were looked on as general measures of truth, and served instead of principles (where the disputants had not lain down any other between them)

them) beyond which there was no going, and which must not be receded from by either side. And thus these maxims getting the name of principles, beyond which men in dispute could not retreat, were by mistake taken to be originals and sources, from whence all knowledge began, and the foundations whereon the sciences were built. Because when in their disputes they came to any of these, they stopped there, and went no farther, the matter was determined. But how much this is a mistake, hath been already shown.

This method of the schools, which have been thought the fountains of knowledge, introduced, as I suppose, the like use of these maxims, into a great part of conversation out of the schools, to stop the mouths of cavillers, whom any one is excused from arguing any longer with, when they deny these general self-evident principles received by all reasonable men, who have once thought of them: but yet their use herein is but to put an end to wrangling. They in truth, when urged in such cases, teach nothing: that is already done by the intermediate ideas made use of in the debate, whose connexion may be seen without the help of those maxims, and so the truth known before the maxim is produced, and the argument brought to a first principle. Men would give off a wrong argument before it came to that, if in their disputes they proposed to themselves the finding and embracing of truth, and not a contest for victory. And thus maxims have their use to put a stop to their perverseness, whose ingenuity should have yielded sooner. But the method of the schools having allowed and encouraged men to oppose and resist evident truth till they are baffled, i. e. till they are reduced to contradict themselves or some established principle; it is no wonder that they should not in civil conversation be ashamed of that, which in the schools is counted a virtue and a glory; obstinately to maintain that side of the question they have chosen, whether true or false, to the last extremity, even after conviction. A strange way to attain truth and knowledge, and that which I think the rational part of mankind, not corrupted by education, could scarce believe should ever be admitted amongst

amongſt the lovers of truth, and ſtudents of religion or nature; or introduced into the ſeminaries of thoſe who are to propagate the truths of religion or philoſophy amongſt the ignorant and unconvinced. How much ſuch a way of learning is like to turn young men's minds from the ſincere ſearch and love of truth; nay, and to make them doubt whether there is any ſuch thing, or at leaſt worth the adhering to, I ſhall not now inquire. This I think, that bating thoſe places, which brought the peripatetic philoſophy into their ſchools, where it continued many ages, without teaching the world any thing but the art of wrangling; theſe maxims were no where thought the foundations on which the ſciences were built, nor the great helps to the advancement of knowledge.

As to theſe general maxims therefore, they are, as I have ſaid, of great uſe in diſputes, to ſtop the mouths of wranglers; but not of much uſe to the diſcovery of unknown truths, or to help the mind forwards in its ſearch after knowledge. For who ever began to build his knowledge on this general propoſition, what is, is; or, it is impoſſible for the ſame thing to be, and not to be: and from either of theſe, as from a principle of ſcience, deduced a ſyſtem of uſeful knowledge? Wrong opinions often involving contradictions, one of theſe maxims, as a touch-ſtone, may ſerve well to ſhow whither they lead. But yet, however fit to lay open the abſurdity or miſtake of a man's reaſoning or opinion, they are of very little uſe for enlightening the underſtanding: and it will not be found, that the mind receives much help from them in its progreſs in knowledge; which would be neither leſs, nor leſs certain, were theſe two general propoſitions never thought on. It is true, as I have ſaid, they ſometimes ſerve in argumentation to ſtop a wrangler's mouth, by ſhowing the abſurdity of what he ſaith, and by expoſing him to the ſhame of contradicting what all the world knows, and he himſelf cannot but own to be true. But it is one thing to ſhow a man that he is in an error; and another to put him in poſſeſſion of truth: and I would fain know what truths theſe two propoſitions are able to teach,

teach, and by their influence make us know, which we did not know before, or could not know without them. Let us reaſon from them as well as we can, they are only about identical predications, and influence, if any at all, none but ſuch. Each particular propoſition concerning identity or diverſity, is as clearly and certainly known in itſelf, if attended to, as either of theſe general ones: only theſe general ones, as ſerving in all caſes, are therefore more inculcated and inſiſted on. As to other leſs general maxims, many of them are no more than bare verbal propoſitions, and teach us nothing but the reſpect and import of names one to another. "The whole is equal to all its parts;" what real truth, I beſeech you, does it teach us? What more is contained in that maxim than what the ſignification of the word totum, or the whole, does of itſelf import? And he that knows that the word whole ſtands for what is made up of all its parts, knows very little leſs, than that the whole is equal to all its parts. And upon the ſame ground, I think that this propoſition, a hill is higher than a valley, and ſeveral the like, may alſo paſs for maxims. But yet maſters of mathematics, when they would, as teachers of what they know, initiate others in that ſcience, do not without reaſon place this, and ſome other ſuch maxims, at the entrance of their ſyſtems; that their ſcholars, having in the beginning perfectly acquainted their thoughts with theſe propoſitions made in ſuch general terms, may be uſed to make ſuch reflections, and have theſe more general propoſitions, as formed rules and ſayings, ready to apply to all particular caſes. Not that if they be equally weighed, they are more clear and evident than the particular inſtances they are brought to confirm; but that, being more familiar to the mind, the very naming them is enough to ſatisfy the underſtanding. But this, I ſay, is more from our cuſtom of uſing them, and the eſtabliſhment they have got in our minds, by our often thinking of them, than from the different evidence of the things. But before cuſtom has ſettled methods of thinking and reaſoning in our minds, I am apt to imagine it is quite otherwiſe; and that the child, when a part of his apple is taken away, knows it better in that particular inſtance, than by this general propoſition,

ſition, the whole is equal to all its parts; and that if one of theſe have need to be confirmed to him by the other, the general has more need to be let into his mind by the particular, than the particular by the general. For in particulars our knowledge begins, and ſo ſpreads itſelf by degrees to generals. Though afterwards the mind takes the quite contrary courſe, and having drawn its knowledge into as general propoſitions as it can, makes thoſe familiar to its thoughts, and accuſtoms itſelf to have recourſe to them, as to the ſtandards of truth and falſhood. By which familiar uſe of them, as rules to meaſure the truth of other propoſitions, it comes in time to be thought, that more particular propoſitions have their truth and evidence from their conformity to theſe more general ones, which in diſcourſe and argumentation are ſo frequently urged, and conſtantly admitted. And this I think to be the reaſon why amongſt ſo many ſelf-evident propoſitions, the moſt general only have had the title of maxims.

Maxims, if care be not taken in the uſe of words, may prove contradictions.

§. 12. One thing farther, I think, it may not be amiſs to obſerve concerning theſe general maxims, that they are ſo far from improving or eſtabliſhing our minds in true knowledge, that if our notions be wrong, looſe or unſteady, and we reſign up our thoughts to the ſound of words, rather than fix them on ſettled determined ideas of things; I ſay, theſe general maxims will ſerve to confirm us in miſtakes; and in ſuch a way of uſe of words, which is moſt common, will ſerve to prove contradictions: v. g. he that, with Des Cartes, ſhall frame in his mind an idea of what he calls body to be nothing but extenſion, may eaſily demonſtrate that there is no vacuum, i. e. no ſpace void of body, by this maxim, what is, is. For the idea to which he annexes the name body, being bare extenſion, his knowledge, that ſpace cannot be without body, is certain. For he knows his own idea of extenſion clearly and diſtinctly, and knows that it is what it is, and not another idea, though it be called by theſe three names, extenſion, body, ſpace. Which three words, ſtanding for one and the ſame idea, may no doubt, with

the ſame evidence and certainty, be affirmed one of another, as each of itſelf: and it is as certain, that whilſt I uſe them all to ſtand for one and the ſame idea, this predication is as true and identical in its ſignification, that ſpace is body, as this predication is true and identical, that body is body, both in ſignification and ſound.

Inſtance in vacuum.

§. 13. But if another ſhould come, and make to himſelf another idea, different from Des Cartes's, of the thing, which yet, with Des Cartes, he calls by the ſame name body; and make his idea, which he expreſſes by the word body, to be of a thing that hath both extenſion and ſolidity together; he will as eaſily demonſtrate, that there may be a vacuum, or ſpace without a body, as Des Cartes demonſtrated the contrary. Becauſe the idea to which he gives the name ſpace being barely the ſimple one of extenſion; and the idea to which he gives the name body, being the complex idea of extenſion and reſiſtibility, or ſolidity, together in the ſame ſubject; theſe two ideas are not exactly one and the ſame, but in the underſtanding as diſtinct as the ideas of one and two, white and black, or as of corporeity and humanity, if I may uſe thoſe barbarous terms: and therefore the predication of them in our minds, or in words ſtanding for them, is not identical, but the negation of them one of another; viz. this propoſition, extenſion or ſpace is not body, is as true and evidently certain, as this maxim, it is impoſſible for the ſame thing to be, and not to be, can make any propoſition.

They prove not the exiſtence of things without us.

§. 14. But yet though both theſe propoſitions (as you ſee) may be equally demonſtrated, viz. that there may be a vacuum, and that there cannot be a vacuum, by theſe two certain principles, viz. what is, is; and the ſame thing cannot be, and not be: yet neither of theſe principles will ſerve to prove to us, that any, or what bodies do exiſt: for that we are left to our ſenſes, to diſcover to us as far as they can. Thoſe univerſal and ſelf-evident principles, being only our conſtant, clear, and diſtinct knowledge of our own ideas, more general or comprehenſive, can aſſure us of nothing that paſſes

paſſes without the mind; their certainty is founded only upon the knowledge we have of each idea by itſelf, and of its diſtinction from others; about which we cannot be miſtaken whilſt they are in our minds, though we may, and often are miſtaken when we retain the names without the ideas; or uſe them confuſedly ſometimes for one, and ſometimes for another idea. In which caſes the force of theſe axioms, reaching only to the ſound, and not the ſignification of the words, ſerves only to lead us into confuſion, miſtake, and errour. It is to ſhow men, that theſe maxims, however cried up for the great guards of truth, will not ſecure them from errour in a careleſs looſe uſe of their words, that I have made this remark. In all that is here ſuggeſted concerning their little uſe for the improvement of knowledge, or dangerous uſe in undetermined ideas, I have been far enough from ſaying or intending they ſhould be laid aſide, as ſome have been too forward to charge me. I affirm them to be truths, ſelf-evident truths; and ſo cannot be laid aſide. As far as their influence will reach, it is in vain to endeavour, nor will I attempt to abridge it. But yet, without any injury to truth or knowledge, I may have reaſon to think their uſe is not anſwerable to the great ſtreſs which ſeems to be laid on them; and I may warn men not to make an ill uſe of them, for the confirming themſelves in errours.

Their application dangerous about complex ideas.

§. 15. But let them be of what uſe they will in verbal propoſitions, they cannot diſcover or prove to us the leaſt knowledge of the nature of ſubſtances, as they are found and exiſt without us, any farther than grounded on experience. And though the conſequence of theſe two propoſitions, called principles, be very clear, and their uſe not dangerous or hurtful, in the probation of ſuch things, wherein there is no need at all of them for proof, but ſuch as are clear by themſelves without them, viz. where our ideas are determined, and known by the names that ſtand for them: yet when theſe principles, viz. what is, is; and it is impoſſible for the ſame thing to be, and not to be; are made uſe of in the probation of propoſitions, wherein are words ſtand-

ſtanding for complex ideas; v. g. man, horſe, gold, virtue; there they are of infinite danger, and moſt commonly make men receive and retain falſhood for manifeſt truth, and uncertainty for demonſtration: upon which follow error, obſtinacy, and all the miſchiefs that can happen, from wrong reaſoning. The reaſon whereof is not, that theſe principles are leſs true, or of leſs force in proving propoſitions made of terms ſtanding for complex ideas, than where the propoſitions are about ſimple ideas. But becauſe men miſtake generally, thinking that where the ſame terms are preſerved, the propoſitions are about the ſame things, though the ideas they ſtand for are in truth different; therefore theſe maxims are made uſe of to ſupport thoſe, which in ſound and appearance are contradictory propoſitions; as is clear in the demonſtrations above-mentioned about a vacuum. So that whilſt men take words for things, as uſually they do, theſe maxims may and do commonly ſerve to prove contradictory propoſitions: as ſhall yet be farther made manifeſt.

Inſtance in man.

§. 16. For inſtance, let man be that concerning which you would by theſe firſt principles demonſtrate any thing, and we ſhall ſee, that ſo far as demonſtration is by theſe principles, it is only verbal, and gives us no certain univerſal true propoſition, or knowledge of any being exiſting without us. Firſt, a child having framed the idea of a man, it is probable that his idea is juſt like that picture, which the painter makes of the viſible appearances joined together; and ſuch a complication of ideas together in his underſtanding, makes up the ſingle complex idea, which he calls man, whereof white or fleſh-colour in England being one, the child can demonſtrate to you that a negroe is not a man, becauſe white colour was one of the conſtant ſimple ideas of the complex idea he calls man: and therefore he can demonſtrate by the principle, it is impoſſible for the ſame thing to be, and not to be, that a negroe is not a man; the foundation of his certainty being not that univerſal propoſition, which perhaps he never heard nor thought of, but the clear diſtinct perception he hath of his own ſimple ideas of black and

and white, which he cannot be perſuaded to take, nor can ever miſtake one for another, whether he knows that maxim or no: and to this child, or any one who hath ſuch an idea, which he calls man, can you never demonſtrate that a man hath a ſoul, becauſe his idea of man includes no ſuch notion or idea in it. And therefore to him, the principle of what is, is, proves not this matter; but it depends upon collection and obſervation, by which he is to make his complex idea called man.

§. 17. Secondly, another that hath gone farther in framing and collecting the idea he calls man, and to the outward ſhape adds laughter and rational diſcourſe, may demonſtrate that infants and changelings are no men, by this maxim, it is impoſſible for the ſame thing to be, and not to be: and I have diſcourſed with very rational men, who have actually denied that they are men.

§. 18. Thirdly, perhaps another makes up the complex idea which he calls man, only out of the ideas of body in general, and the powers of language and reaſon, and leaves out the ſhape wholly: this man is able to demonſtrate, that a man may have no hands, but be quadrupes, neither of thoſe being included in his idea of man; and in whatever body or ſhape he found ſpeech and reaſon joined, that was a man: becauſe having a clear knowledge of ſuch a complex idea, it is certain that what is, is.

Little uſe of theſe maxims in proofs where we have clear and diſtinct ideas.

§. 19. So that, if rightly conſidered, I think we may ſay, that where our ideas are determined in our minds, and have annexed to them by us known and ſteady names under thoſe ſettled determinations, there is little need or no uſe at all of theſe maxims, to prove the agreement or diſagreement of any of them. He that cannot diſcern the truth or falſhood of ſuch propoſitions, without the help of theſe and the like maxims, will not be helped by theſe maxims to do it: ſince he cannot be ſuppoſed to know the truth of theſe maxims themſelves without proof, if he cannot know the truth of others without proof, which are as ſelf-evident as theſe. Upon this ground it is, that intuitive knowledge neither requires nor admits any

any proof, one part of it more than another. He that will suppose it does, takes away the foundation of all knowledge and certainty: and he that needs any proof to make him certain, and give his assent to this proposition, that two are equal to two, will also have need of a proof to make him admit, that what is, is. He that needs a probation to convince him, that two are not three, that white is not black, that a triangle is not a circle, &c. or any other two determined distinct ideas are not one and the same, will need also a demonstration to convince him, that it is impossible for the same thing to be, and not to be.

Their use dangerous where our ideas are confused.

§. 20. And as these maxims are of little use, where we have determined ideas, so they are, as I have showed, of dangerous use, where our ideas are not determined; and where we use words that are not annexed to determined ideas, but such as are of a loose and wandering signification, sometimes standing for one, and sometimes for another idea: from which follow mistake and errour, which these maxims (brought as proofs to establish propositions, wherein the terms stand for undetermined ideas) do by their authority confirm and rivet.

CHAP. VIII.

Of Trifling Propositions.

Some propositions bring no increase to our knowledge.

§. 1. WHETHER the maxims treated of in the foregoing chapter be of that use to real knowledge, as is generally supposed, I leave to be considered. This, I think, may confidently be affirmed, that there are universal propositions; which though they be certainly true, yet they add no light to our understandings, bring no increase to our knowledge. Such are,

§. 2.

§. 2. First, all purely identical propositions. These obviously, and at first blush, appear to contain no instruction in them. For when we affirm the said term of itself, whether it be barely verbal, or whether it contains any clear and real idea, it shows us nothing but what we must certainly know before, whether such a proposition be either made by or proposed to us. Indeed that most general one, what is, is, may serve sometimes to show a man the absurdity he is guilty of, when by circumlocution, or equivocal terms, he would, in particular instances, deny the same thing of itself; because no-body will so openly bid defiance to common sense, as to affirm visible and direct contradictions in plain words; or if he does, a man is excused if he breaks off any farther discourse with him. But yet, I think, I may say, that neither that received maxim, nor any other identical proposition teaches us any thing: and though in such kind of propositions, this great and magnified maxim, boasted to be the foundation of demonstration, may be and often is made use of to confirm them; yet all it proves amounts to no more than this, that the same word may with great certainty be affirmed of itself, without any doubt of the truth of any such proposition; and let me add also, without any real knowledge.

As first, identical propositions.

§. 3. For at this rate, any very ignorant person, who can but make a proposition, and knows what he means when he says, ay or no, may make a million of propositions, of whose truths he may be infallibly certain, and yet not know one thing in the world thereby; v. g. what is a soul, is a soul; or a soul is a soul; a spirit is a spirit; a fetiche is a fetiche, &c. These all being equivalent to this proposition, viz. what is, is, i. e. what hath existence, hath existence; or who hath a soul, hath a soul. What is this more than trifling with words? It is but like a monkey shifting his oyster from one hand to the other; and had he but words, might, no doubt, have said, "oyster in right hand is subject, and oyster in left hand is predicate:" and so might have made a self-evident proposition of oyster, i. e. oyster is oyster; and yet, with all this, not have been one whit the wiser or

more knowing: and that way of handling the matter would much at one have ſatisfied the monkey's hunger, or a man's underſtanding; and they would have improved in knowledge and bulk together.

I know there are ſome who, becauſe identical propoſitions are ſelf-evident, ſhow a great concern for them, and think they do great ſervice to philoſophy by crying them up, as if in them was contained all knowledge, and the underſtanding were led into all truth by them only, I grant as forwardly as any one, that they are all true and ſelf-evident. I grant farther, that the foundation of all our knowledge lies in the faculty we have of perceiving the ſame idea to be the ſame, and of diſcerning it from thoſe that are different, as I have ſhown in the foregoing chapter. But how that vindicates the making uſe of identical propoſitions, for the improvement of knowledge, from the imputation of trifling, I do not ſee. Let any one repeat, as often as he pleaſes, that the will is the will, or lay what ſtreſs on it he thinks fit; of what uſe is this, and an infinite the like propoſitions, for the enlarging our knowledge? Let a man abound, as much as the plenty of words which he has will permit, in ſuch propoſitions as theſe; a law is a law, and obligation is obligation; right is right, and wrong is wrong: will theſe and the like ever help him to an acquaintance with ethicks? or inſtruct him or others in the knowledge of morality? Thoſe who know not, nor perhaps ever will know, what is right and what is wrong, nor the meaſures of them; can with as much aſſurance make, and infallibly know the truth of, theſe and all ſuch propoſitions, as he that is beſt inſtructed in morality can do. But what advance do ſuch propoſitions give in the knowledge of any thing neceſſary or uſeful for their conduct?

He would be thought to do little leſs than trifle, who, for the enlightening the underſtanding in any part of knowledge, ſhould be buſy with identical propoſitions, and inſiſt on ſuch maxims as theſe: ſubſtance is ſubſtance, and body is body; a vacuum is a vacuum, and a vortex is a vortex; a centaur is a centaur, and a chimera is a chimera, &c. For theſe and all ſuch are equally true,

true, equally certain, and equally self-evident. But yet they cannot but be counted trifling, when made use of as principles of instruction, and stress laid on them, as helps to knowledge: since they teach nothing but what every one, who is capable of discourse, knows without being told; viz. that the same term is the same term, and the same idea the same idea. And upon this account it was that I formerly did, and do still think, the offering and inculcating such propositions, in order to give the understanding any new light or inlet into the knowledge of things, no better than trifling.

Instruction lies in something very different; and he that would enlarge his own, or another's mind, to truths he does not yet know, must find out intermediate ideas, and then lay them in such order one by another, that the understanding may see the agreement or disagreement of those in question. Propositions that do this are instructive; but they are far from such as affirm the same term of itself: which is no way to advance one's self or others, in any sort of knowledge. It no more helps to that, than it would help any one, in his learning to read, to have such propositions as these inculcated to him. An A is an A, and a B is a B; which a man may know as well as any school-master, and yet never be able to read a word as long as he lives. Nor do these, or any such identical propositions, help him one jot forwards in the skill of reading, let him make what use of them he can.

If those who blame my calling them trifling propositions, had but read, and been at the pains to understand, what I had above writ in very plain English, they could not but have seen that by identical propositions I mean only such, wherein the same term, importing the same idea, is affirmed of itself: which I take to be the proper signification of identical propositions: and concerning all such, I think I may continue safely to say, that to propose them as instructive, is no better than trifling. For no one who has the use of reason can miss them, where it is necessary they should be taken notice of; nor doubt of their truth, when he does take notice of them.

But if men will call propositions identical, wherein the same term is not affirmed of itself, whether they

speak more properly than I, others must judge; this is certain, all that they say of propositions that are not identical in my sense, concerns not me, nor what I have said; all that I have said relating to those propositions wherein the same term is affirmed of itself. And I would fain see an instance, wherein any such can be made use of, to the advantage and improvement of any one's knowledge. Instances of other kinds, whatever use may be made of them, concern not me, as not being such as I call identical.

Secondly, when a part of any complex idea is predicated of the whole.

§. 4. Secondly, another sort of trifling propositions is, when a part of the complex idea is predicated of the name of the whole; a part of the definition of the word defined. Such are all propositions wherein the genus is predicated of the species, or more comprehensive of less comprehensive terms: for what information, what knowledge carries this proposition in it, viz. lead is a metal, to a man who knows the complex idea the name lead stands for? all the simple ideas that go to the complex one signified by the term metal, being nothing but what he before comprehended, and signified by the name lead. Indeed, to a man that knows the signification of the word metal, and not of the word lead, it is a shorter way to explain the signification of the word lead, by saying it is a metal, which at once expresses several of its simple ideas, than to enumerate them one by one, telling him it is a body very heavy, fusible, and malleable.

As part of the definition of the term defined.

§. 5. Alike trifling it is, to predicate any other part of the definition of the term defined, or to affirm any one of the simple ideas of a complex one of the name of the whole complex idea; as, all gold is fusible. For fusibility being one of the simple ideas that goes to the making up the complex one the sound gold stands for, what can it be but playing with sounds, to affirm that of the name gold, which is comprehended in its received signification? It would be thought little better than ridiculous, to affirm gravely as a truth of moment, that gold is yellow; and I see not how it is any jot more material

to

to ſay, it is fuſible, unleſs that quality be left out of the complex idea, of which the ſound gold is the mark in ordinary ſpeech. What inſtruction can it carry with it, to tell one that which he hath been told already, or he is ſuppoſed to know before? For I am ſuppoſed to know the ſignification of the word another uſes to me, or elſe he is to tell me. And if I know that the name gold ſtands for this complex idea of body, yellow, heavy, fuſible, malleable, it will not much inſtruct me to put it ſolemnly afterwards in a propoſition, and gravely ſay, all gold is fuſible. Such propoſitions can only ſerve to ſhow the diſingenuity of one, who will go from the definition of his own terms, by reminding him ſometimes of it; but carry no knowledge with them, but of the ſignification of words, however certain they be.

Inſtance, man and palfry.

§. 6. Every man is an animal, or living body, is as certain a propoſition as can be; but no more conducing to the knowledge of things, than to ſay, a palfry is an ambling horſe, or a neighing ambling animal, both being only about the ſignification of words, and make me know but this; that body, ſenſe and motion, or power of ſenſation and moving, are three of thoſe ideas that I always comprehend and ſignify by the word man; and where they are not to be found together, the name man belongs not to that thing: and ſo of the other, that body, ſenſe, and a certain way of going, with a certain kind of voice, are ſome of thoſe ideas which I always comprehend, and ſignify by the word palfry; and when they are not to be found together, the name palfry belongs not to that thing. It is juſt the ſame, and to the ſame purpoſe, when any term ſtanding for any one or more of the ſimple ideas, that all together make up that complex idea which is called man, is affirmed of the term man: v. g. ſuppoſe a Roman ſignified by the word homo all theſe diſtinct ideas united in one ſubject, "corporietas, ſenſibilitas, potentia ſe movendi, rationalitas, riſibilitas;" he might, no doubt, with great certainty, univerſally affirm one, more, or all of theſe together of the word homo, but did no more than ſay that the word homo, in his country, comprehended in its ſignification all theſe

ideas. Much like a romance knight, who by the word palfry signified these ideas; body of a certain figure, four-legged, with sense, motion, ambling, neighing, white, used to have a woman on his back; might with the same certainty universally affirm also any or all of these of the word palfry: but did thereby teach no more, but that the word palfry, in his or romance language, stood for all these, and was not to be applied to any thing, where any of these was wanting. But he that shall tell me, that in whatever thing sense, motion, reason, and laughter, were united, that thing had actually a notion of God, or would be cast into a sleep by opium, made indeed an instructive proposition: because neither having the notion of God, nor being cast into sleep by opium, being contained in the idea signified by the word man, we are by such propositions taught something more than barely what the word man stands for; and therefore the knowledge contained in it is more than verbal.

For this teaches but the signification of words,

§. 7. Before a man makes any proposition, he is supposed to understand the terms he uses in it, or else he talks like a parrot, only making a noise by imitation, and framing certain sounds, which he has learnt of others; but not as a rational creature, using them for signs of ideas which he has in his mind. The hearer also is supposed to understand the terms as the speaker uses them, or else he talks jargon, and makes an unintelligible noise. And therefore he trifles with words, who makes such a proposition, which, when it is made, contains no more than one of the terms does, and which a man was supposed to know before; v. g. a triangle hath three sides, or saffron is yellow. And this is no farther tolerable, than where a man goes to explain his terms, to one who is supposed or declares himself not to understand him: and then it teaches only the signification of that word, and the use of that sign.

But no real knowledge.

§. 8. We can know then the truth of two sorts of propositions with perfect certainty; the one is, of those trifling propositions which have a certainty in them, but it is only a verbal cer-

certainty, but not inſtructive. And, ſecondly, we can know the truth, and ſo may be certain in propoſitions, which affirm ſomething of another, which is a neceſſary conſequence of its preciſe complex idea, but not contained in it: as that the external angle of all triangles is bigger than either of the oppoſite internal angles; which relation of the outward angle to either of the oppoſite internal angles, making no part of the complex idea ſignified by the name triangle, this is a real truth, and conveys with it inſtructive real knowledge.

General propoſitions concerning ſubſtances are often trifling.

§. 9. We having little or no knowledge of what combinations there be of ſimple ideas exiſting together in ſubſtances, but by our ſenſes, we cannot make any univerſal certain propoſitions concerning them, any farther than our nominal eſſences lead us: which being to a very few and inconſiderable truths, in reſpect of thoſe which depend on their real conſtitutions, the general propoſitions that are made about ſubſtances, if they are certain, are for the moſt part but trifling; and if they are inſtructive, are uncertain, and ſuch as we can have no knowledge of their real truth, how much ſoever conſtant obſervation and analogy may aſſiſt our judgment in gueſſing. Hence it comes to paſs, that one may often meet with very clear and coherent diſcourſes, that amount yet to nothing. For it is plain, that names of ſubſtantial beings, as well as others, as far as they have relative ſignifications affixed to them, may, with great truth, be joined negatively and affirmatively in propoſitions, as their relative definitions make them fit to be ſo joined; and propoſitions conſiſting of ſuch terms, may, with the ſame clearneſs, be deduced one from another, as thoſe that convey the moſt real truths: and all this, without any knowledge of the nature or reality of things exiſting without us. By this method one may make demonſtrations and undoubted propoſitions in words, and yet thereby advance not one jot in the knowledge of the truth of things; v. g. he that having learnt theſe following words, with their ordinary mutually relative acceptations annexed to them: v. g. ſubſtance, man, animal, form, ſoul, vegetative, ſenſitive,

rational, may make several undoubted propositions about the soul, without knowing at all what the soul really is: and of this sort, a man may find an infinite number of propositions, reasonings, and conclusions, in books of metaphysicks, school-divinity, and some sort of natural philosophy; and, after all, know as little of God, spirits, or bodies, as he did before he set out.

And why.

§. 10. He that hath liberty to define, i. e. to determine the signification of his names of substances (as certainly every one does in effect, who makes them stand for his own ideas) and makes their significations at a venture, taking them from his own or other men's fancies, and not from an examination or inquiry into the nature of things themselves; may, with little trouble, demonstrate them one of another, according to those several respects and mutual relations he has given them one to another; wherein, however things agree or disagree in their own nature, he needs mind nothing but his own notions, with the names he hath bestowed upon them: but thereby no more increases his own knowledge, than he does his riches, who, taking a bag of counters, calls one in a certain place a pound, another in another place a shilling, and a third in a third place a penny; and so proceeding, may undoubtedly reckon right, and cast up a great sum, according to his counters so placed, and standing for more or less as he pleases, without being one jot the richer, or without even knowing how much a pound, shilling, or penny is, but only that one is contained in the other twenty times, and contains the other twelve: which a man may also do in the signification of words, by making them, in respect of one another, more, or less, or equally comprehensive.

Thirdly, using words variously is trifling with them.

§. 11. Though yet concerning most words used in discourses, equally argumentative and controversial, there is this more to be complained of, which is the worst sort of trifling, and which sets us yet farther from the certainty of knowledge we hope to attain by them, or find in them; viz. that most writers are so far from instructing us in the nature and knowledge of things, that

that they use their words loosely and uncertainly, and do not, by using them constantly and steadily in the same significations, make plain and clear deductions of words one from another, and make their discourses coherent and clear (how little soever they were instructive) which were not difficult to do, did they not find it convenient to shelter their ignorance or obstinacy, under the obscurity and perplexedness of their terms: to which, perhaps, inadvertency and ill custom do in many men much contribute.

§. 12. To conclude; barely verbal propositions may be known by these following marks:

Marks of verbal propositions:

1. Predication in abstract.

First, all propositions, wherein two abstract terms are affirmed one of another, are barely about the signification of sounds. For since no abstract idea can be the same with any other but itself, when its abstract name is affirmed of any other term, it can signify no more but this, that it may or ought to be called by that name, or that these two names signify the same idea. Thus should any one say, that parsimony is frugality, that gratitude is justice, that this or that action is or is not temperate; however specious these and the like propositions may at first sight seem, yet when we come to press them, and examine nicely what they contain, we shall find that it all amounts to nothing but the signification of those terms.

2. A part of the definition predicated of any term.

§. 13. Secondly, all propositions wherein a part of the complex idea, which any term stands for, is predicated of that term, are only verbal; v. g. to say that gold is a metal or heavy. And thus all propositions, wherein more comprehensive words, called genera, are affirmed of subordinate or less comprehensive, called species, or individuals, are barely verbal.

When by these two rules we have examined the propositions that make up the discourses we ordinarily meet with both in and out of books, we shall, perhaps, find that a greater part of them, than is usually suspected, are purely about the signification of words, and contain nothing in them, but the use and application of these signs.

This,

This, I think, I may lay down for an infallible rule, that wherever the distinct idea any word stands for is not known and considered, and something not contained in the idea is not affirmed or denied of it; there our thoughts stick wholly in sounds, and are able to attain no real truth or falshood. This, perhaps, if well heeded, might save us a great deal of useless amusement and dispute, and very much shorten our trouble and wandering, in the search of real and true knowledge.

CHAP. IX.

Of our Knowledge of Existence.

General certain propositions concern not existence.

§. 1. HITHERTO we have only considered the essences of things, which being only abstract ideas, and thereby removed in our thoughts from particular existence (that being the proper operation of the mind, in abstraction, to consider an idea under no other existence, but what it has in the understanding) gives us no knowledge of real existence at all. Where by the way we may take notice, that universal propositions, of whose truth or falshood we can have certain knowledge, concern not existence; and farther, that all particular affirmations or negations, that would not be certain if they were made general, are only concerning existence; they declaring only the accidental union or separation of ideas in things existing, which, in their abstract natures, have no known necessary union or repugnancy.

A threefold knowledge of existence.

§. 2. But, leaving the nature of propositions and different ways of predication to be considered more at large in another place, let us proceed now to inquire concerning our knowledge of the existence of things, and how we come by it. I say then, that we have the knowledge of our own existence by intuition; of the existence of God by demonstration; and of other things by sensation.

§. 3.

§. 3. As for our own existence, we perceive it so plainly, and so certainly, that it neither needs nor is capable of any proof. For nothing can be more evident to us, than our own existence; I think, I reason, I feel pleasure and pain: can any of these be more evident to me, than my own existence? if I doubt of all other things, that very doubt makes me perceive my own existence, and will not suffer me to doubt of that. For if I know I feel pain, it is evident I have as certain perception of my own existence, as of the existence of the pain I feel: or if I know I doubt, I have as certain perception of the existence of the thing doubting, as of that thought which I call doubt. Experience then convinces us, that we have an intuitive knowledge of our own existence, and an internal infallible perception that we are. In every act of sensation, reasoning, or thinking, we are conscious to ourselves of our own being; and, in this matter, come not short of the highest degree of certainty.

Our knowledge of our own existence is intuitive.

CHAP. X.

Of our Knowledge of the Existence of a God.

§. 1. THOUGH God has given us no innate ideas of himself; though he has stamped no original characters on our minds, wherein we may read his being; yet having furnished us with those faculties our minds are endowed with, he hath not left himself without witness: since we have sense, perception, and reason, and cannot want a clear proof of him, as long as we carry ourselves about us. Nor can we justly complain of our ignorance in this great point, since he has so plentifully provided us with the means to discover and know him, so far as is necessary to the end of our being, and the great concernment of our happiness. But though this be the most obvious truth that

We are capable of knowing certainly that there is a God.

that reason discovers; and though its evidence be (if I mistake not) equal to mathematical certainty: yet it requires thought and attention, and the mind must apply itself to a regular deduction of it from some part of our intuitive knowledge, or else we shall be as uncertain and ignorant of this as of other propositions, which are in themselves capable of clear demonstration. To show therefore that we are capable of knowing, i. e. being certain that there is a God, and how we may come by this certainty, I think we need go no farther than ourselves, and that undoubted knowledge we have of our own existence.

Man knows that he himself is.

§. 2. I think it is beyond question, that man has a clear idea of his own being; he knows certainly he exists, and that he is something. He that can doubt, whether he be any thing or no, I speak not to, no more than I would argue with pure nothing, or endeavour to convince non-entity, that it were something. If any one pretends to be so sceptical, as to deny his own existence (for really to doubt of it is manifestly impossible) let him for me enjoy his beloved happiness of being nothing, until hunger, or some other pain, convince him of the contrary. This then, I think, I may take for a truth, which every one's certain knowledge assures him of, beyond the liberty of doubting, viz. that he is something that actually exists.

He knows also that nothing cannot produce a being, therefore something eternal.

§. 3. In the next place, man knows by an intuitive certainty, that bare nothing can no more produce any real being, than it can be equal to two right angles. If a man knows not that non-entity, or the absence of all being, cannot be equal to two right angles, it is impossible he should know any demonstration in Euclid. If therefore we know there is some real being, and that non-entity cannot produce any real being, it is an evident demonstration, that from eternity there has been something; since what was not from eternity had a beginning; and what had a beginning must be produced by something else.

§. 4.

That eternal being must be most powerful.

§. 4. Next, it is evident, that what had its being and beginning from another, must also have all that which is in, and belongs to its being, from another too. All the powers it has must be owing to, and received from, the same source. This eternal source then of all being must also be the source and original of all power; and so this eternal being must be also the most powerful.

And most knowing.

§. 5. Again, a man finds in himself perception and knowledge. We have then got one step farther; and we are certain now, that there is not only some being, but some knowing intelligent being in the world.

There was a time then, when there was no knowing being, and when knowledge began to be; or else there has been also a knowing being from eternity. If it be said, there was a time when no being had any knowledge, when that eternal being was void of all understanding; I reply, that then it was impossible there should ever have been any knowledge: it being as impossible that things wholly void of knowledge, and operating blindly, and without any perception, should produce a knowing being, as it is impossible that a triangle should make itself three angles bigger than two right ones. For it is as repugnant to the idea of senseless matter, that it should put into itself, sense, perception, and knowledge, as it is repugnant to the idea of a triangle, that it should put into itself greater angles than two right ones.

And therefore God.

§. 6. Thus from the consideration of ourselves, and what we infallibly find in our own constitutions, our reason leads us to the knowledge of this certain and evident truth, that there is an eternal, most powerful, and most knowing being; which whether any one will please to call God, it matters not. The thing is evident, and from this idea duly considered, will easily be deduced all those other attributes, which we ought to ascribe to this eternal being. If nevertheless any one should be found so senselessly arrogant, as to suppose man alone knowing and wise, but yet the product of mere ignorance and chance; and that all the rest of the universe acted only

only by that blind hap-hazard: I shall leave with him that very rational and emphatical rebuke of Tully, l. ii. de leg. to be considered at his leisure: "What can be "more sillily arrogant and misbecoming, than for a "man to think that he has a mind and understanding "in him, but yet in all the universe beside there is no "such thing? Or that those things, which with the "utmost stretch of his reason he can scarce comprehend, "should be moved and managed without any reason at "all? "Quid est enim verius, quam neminem esse "oportere tam stulte arrogantem, ut in se mentem & "rationem putet inesse, in cœlo mundoque non putet? "Aut ea quæ vix summa ingenii ratione comprehendat, "nulla ratione moveri putet?"

From what has been said, it is plain to me, we have a more certain knowledge of the existence of a God, than of any thing our senses have not immediately discovered to us. Nay, I presume I may say, that we more certainly know that there is a God, than that there is any thing else without us. When I say we know, I mean there is such a knowledge within our reach which we cannot miss, if we will but apply our minds to that, as we do to several other inquiries.

Our idea of a most perfect being not the sole proof of a God.

§. 7. How far the idea of a most perfect being, which a man may frame in his mind, does or does not prove the existence of a God, I will not here examine. For in the different make of men's tempers and application of their thoughts, some arguments prevail more on one, and some on another, for the confirmation of the same truth. But yet, I think, this I may say, that it is an ill way of establishing this truth, and silencing atheists, to lay the whole stress of so important a point as this upon that sole foundation; and take some men's having that idea of God in their minds (for it is evident some men have none, and some worse than none, and the most very different) for the only proof of a deity: and out of an over-fondness of that darling invention cashier, or at least endeavour to invalidate all other arguments, and forbid us to hearken to those proofs, as being weak or fallacious, which our own existence and

the sensible parts of the universe offer so clearly and cogently to our thoughts, that I deem it impossible for a considering man to withstand them. For I judge it as certain and clear a truth, as can any where be delivered, that the invisible things of God are clearly seen from the creation of the world, being understood by the things that are made, even his eternal power and godhead. Though our own being furnishes us, as I have shown, with an evident and incontestible proof of a deity; and I believe no-body can avoid the cogency of it, who will but as carefully attend to it, as to any other demonstration of so many parts: yet this being so fundamental a truth, and of that consequence, that all religion and genuine morality depend thereon, I doubt not but I shall be forgiven by my reader, if I go over some parts of this argument again, and enlarge a little more upon them.

Something from eternity.

§. 8. There is no truth more evident, than that something must be from eternity. I never yet heard of any one so unreasonable, or that could suppose so manifest a contradiction, as a time wherein there was perfectly nothing: this being of all absurdities the greatest, to imagine that pure nothing, the perfect negation and absence of all beings, should ever produce any real existence.

It being then unavoidable for all rational creatures to conclude, that something has existed from eternity; let us next see what kind of thing that must be.

Two sorts of beings, cogitative and incogitative.

§. 9. There are but two sorts of beings in the world, that man knows or conceives.

First, such as are purely material, without sense, perception or thought, as the clippings of our beards, and parings of our nails.

Secondly, sensible, thinking, perceiving beings, such as we find ourselves to be, which, if you please, we will hereafter call cogitative and incogitative beings; which to our present purpose, if for nothing else, are, perhaps, better terms than material and immaterial.

Incogitative being cannot produce a cogitative.

§. 10. If then there must be something eternal, let us see what sort of being it must be. And to that, it is very obvious to reason, that it must necessarily be a cogitative

being.

being. For it is as impossible to conceive, that ever bare incogitative matter should produce a thinking intelligent being, as that nothing should of itself produce matter. Let us suppose any parcel of matter eternal, great or small, we shall find it, in itself, able to produce nothing. For example; let us suppose the matter of the next pebble we meet with eternal, closely united, and the parts firmly at rest together; if there were no other being in the world, must it not eternally remain so, a dead inactive lump? Is it possible to conceive it can add motion to itself, being purely matter, or produce any thing? Matter then, by its own strength, cannot produce in itself so much as motion: the motion it has must also be from eternity, or else be produced, and added to matter by some other being more powerful than matter; matter, as is evident, having not power to produce motion in itself. But let us suppose motion eternal too; yet matter, incogitative matter and motion, whatever changes it might produce of figure and bulk, could never produce thought: knowledge will still be as far beyond the power of motion and matter to produce, as matter is beyond the power of nothing or nonentity to produce. And I appeal to every one's own thoughts, whether he cannot as easily conceive matter produced by nothing, as thought to be produced by pure matter, when before there was no such thing as thought, or an intelligent being existing? Divide matter into as minute parts as you will (which we are apt to imagine a sort of spiritualizing, or making a thinking thing of it) vary the figure and motion of it as much as you please; a globe, cube, cone, prism, cylinder, &c. whose diameters are but 10000000th part of a gry *, will operate no otherwise upon other bodies of proportionable bulk, than those of an inch or foot diameter; and

* A gry is $\frac{1}{10}$ of a line, a line $\frac{1}{10}$ of an inch, an inch $\frac{1}{10}$ of a philosophical foot, a philosophical foot $\frac{1}{3}$ of a pendulum, whose diadroms, in the latitude of 45 degrees, are each equal to one second of time or $\frac{1}{60}$ of a minute. I have affectedly made use of this measure here, and the parts of it, under a decimal division, with names to them; because, I think, it would be of general convenience, that this should be the common measure, in the commonwealth of letters.

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you may as rationally expect to produce sense, thought, and knowledge, by putting together, in a certain figure and motion, gross particles of matter, as by those that are the very minutest, that do any where exist. They knock, impel, and resist one another, just as the greater do, and that is all they can do. So that if we will suppose nothing first, or eternal; matter can never begin to be: if we suppose bare matter, without motion, eternal; motion can never begin to be: if we suppose only matter and motion first, or eternal; thought can never begin to be. For it is impossible to conceive that matter, either with or without motion, could have originally in and from itself sense, perception and knowledge; as is evident from hence, that then sense, perception and knowledge must be a property eternally inseparable from matter and every particle of it. Not to add, that though our general or specific conception of matter makes us speak of it as one thing, yet really all matter is not one individual thing, neither is there any such thing existing as one material being, or one single body that we know or can conceive. And therefore if matter were the eternal first cogitative being, there would not be one eternal infinite cogitative being, but an infinite number of eternal finite cogitative beings, independent one of another, of limited force and distinct thoughts, which could never produce that order, harmony and beauty which are to be found in nature. Since therefore whatsoever is the first eternal being must necessarily be cogitative; and whatsoever is first of all things, must necessarily contain in it, and actually have, at least, all the perfections that can ever after exist; nor can it ever give to another any perfection that it hath not, either actually in itself, or at least in a higher degree; it necessarily follows, that the first eternal being cannot be matter.

Therefore there has been an eternal wisdom.

§. 11. If therefore it be evident, that something necessarily must exist from eternity, it is also as evident, that that something must necessarily be a cogitative being: for it is as impossible that incogitative matter should produce a cogitative being, as that nothing, or the ne-

gation of all being, ſhould produce a poſitive being or matter.

§. 12. Though this diſcovery of the neceſſary exiſtence of an eternal mind does ſufficiently lead us into the knowledge of God; ſince it will hence follow, that all other knowing beings that have a beginning muſt depend on him, and have no other ways of knowledge, or extent of power, than what he gives them; and therefore if he made thoſe, he made alſo the leſs excellent pieces of this univerſe, all inanimate beings, whereby his omniſcience, power, and providence will be eſtabliſhed, and all his other attributes neceſſarily follow: yet to clear up this a little farther, we will ſee what doubts can be raiſed againſt it.

Whether material or no.

§. 13. Firſt, perhaps it will be ſaid, that though it be as clear as demonſtration can make it, that there muſt be an eternal being, and that being muſt alſo be knowing; yet it does not follow, but that thinking being may alſo be material. Let it be ſo; it equally ſtill follows, that there is a God. For if there be an eternal, omniſcient, omnipotent being, it is certain that there is a God, whether you imagine that being to be material or no. But herein, I ſuppoſe, lies the danger and deceit of that ſuppoſition: there being no way to avoid the demonſtration, that there is an eternal knowing being, men, devoted to matter, would willingly have it granted, that this knowing being is material; and then letting ſlide out of their minds, or the diſcourſe, the demonſtration whereby an eternal knowing being was proved neceſſarily to exiſt, would argue all to be matter, and ſo deny a God, that is, an eternal cogitative being: whereby they are ſo far from eſtabliſhing, that they deſtroy their own hypotheſis. For if there can be, in their opinion, eternal matter, without any eternal cogitative being, they manifeſtly ſeparate matter and thinking, and ſuppoſe no neceſſary connexion of the one with the other, and ſo eſtabliſh the neceſſity of an eternal ſpirit, but not of matter; ſince it has been proved already, that an eternal cogitative being is unavoidably to be granted. Now if thinking and matter may be ſeparated, the eternal exiſtence

of matter will not follow from the eternal exiſtence of a cogitative being, and they ſuppoſe it to no purpoſe.

Not material, 1. Becauſe every particle of matter is not cogitative.

§. 14. But now let us ſuppoſe they can ſatisfy themſelves or others, that this eternal thinking being is material.

Firſt, I would aſk them, Whether they imagine, that all matter, every particle of matter, thinks? This, I ſuppoſe, they will ſcarce ſay; ſince then there would be as many eternal thinking beings as there are particles of matter, and ſo an infinity of gods. And yet if they will not allow matter as matter, that is, every particle of matter to be as well cogitative as extended, they will have as hard a taſk to make out to their own reaſons a cogitative being out of incogitative particles, as an extended being out of unextended parts, if I may ſo ſpeak.

2. One particle alone of matter cannot be cogitative.

§. 15. Secondly, if all matter does not think, I next aſk, "Whether it be only one "atom that does ſo?" This has as many abſurdities as the other; for then this atom of matter muſt be alone eternal or not. If this alone be eternal, then this alone, by its powerful thought or will, made all the reſt of matter. And ſo we have the creation of matter by a powerful thought, which is that the materialiſts ſtick at. For if they ſuppoſe one ſingle thinking atom to have produced all the reſt of matter, they cannot aſcribe that pre-eminency to it upon any other account than that of its thinking, the only ſuppoſed difference. But allow it to be by ſome other way, which is above our conception, it muſt ſtill be creation, and theſe men muſt give up their great maxim, "ex nihilo nil fit." If it be ſaid, that all the reſt of matter is equally eternal, as that thinking atom, it will be to ſay any thing at pleaſure, though ever ſo abſurd: for to ſuppoſe all matter eternal, and yet one ſmall particle in knowledge and power infinitely above all the reſt, is without any the leaſt appearance of reaſon to frame an hypotheſis. Every particle of matter, as matter, is capable of all the ſame figures and motions of any other; and I challenge any one, in his thoughts, to add any thing elſe to one above another.

3. A system of incogitative matter cannot be cogitative.

§. 16. If then neither one peculiar atom alone can be this eternal thinking being; nor all matter as matter, i. e. every particle of matter, can be it; it only remains, that it is some certain system of matter duly put together, that is this thinking eternal being. This is that, which, I imagine, is that notion which men are aptest to have of God; who would have him a material being, as most readily suggested to them, by the ordinary conceit they have of themselves, and other men, which they take to be material thinking beings. But this imagination, however more natural, is no less absurd than the other: for to suppose the eternal thinking being to be nothing else but a composition of particles of matter each whereof is incogitative, is to ascribe all the wisdom and knowledge of that eternal being only to the juxta-position of parts; than which nothing can be more absurd. For unthinking particles of matter, however put together, can have nothing thereby added to them, but a new relation of position, which it is impossible should give thought and knowledge to them.

Whether in motion or at rest.

§. 17. But farther, this corporeal system either has all its parts at rest, or it is a certain motion of the parts wherein its thinking consists. If it be perfectly at rest, it is but one lump, and so can have no privileges above one atom.

If it be the motion of its parts, on which its thinking depends, all the thoughts there must be unavoidably accidental and limited; since all the particles that by motion cause thought, being each of them in itself without any thought, cannot regulate its own motions, much less be regulated by the thought of the whole; since that thought is not the cause of motion (for then it must be antecedent to it, and so without it) but the consequence of it, whereby freedom, power, choice, and all rational and wise thinking or acting, will be quite taken away: so that such a thinking being will be no better nor wiser than pure blind matter; since to resolve all into the accidental unguided motions of blind matter, or into thought depending on unguided motions of blind matter,

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is the ſame thing; not to mention the narrowneſs of ſuch thoughts and knowledge that muſt depend on the motion of ſuch parts. But there needs no enumeration of any more abſurdities and impoſſibilities in this hypotheſis (however full of them it be) than that before-mentioned; ſince let this thinking ſyſtem be all, or a part of the matter of the univerſe, it is impoſſible that any one particle ſhould either know its own, or the motion of any other particle, or the whole know the motion of every particle; and ſo regulate its own thoughts or motions, or indeed have any thought reſulting from ſuch motion.

Matter not co-eternal with an eternal mind.

§. 18. Others would have matter to be eternal, notwithſtanding that they allow an eternal, cogitative, immaterial being. This, though it take not away the being of a God, yet ſince it denies one and the firſt great piece of his workmanſhip, the creation, let us conſider it a little. Matter muſt be allowed eternal: Why? becauſe you cannot conceive how it can be made out of nothing; why do you not alſo think yourſelf eternal? You will anſwer perhaps, becauſe about twenty or forty years ſince you began to be. But if I aſk you what that you is, which began then to be, you can ſcarce tell me. The matter, whereof you are made, began not then to be; for if it did, then it is not eternal: but it began to be put together in ſuch a faſhion and frame as makes up your body; but yet that frame of particles is not you, it makes not that thinking thing you are; (for I have now to do with one who allows an eternal, immaterial, thinking being, but would have unthinking matter eternal too) therefore when did that thinking thing begin to be? If it did never begin to be, then have you always been a thinking thing from eternity; the abſurdity whereof I need not confute, till I meet with one who is ſo void of underſtanding as to own it. If therefore you can allow a thinking thing to be made out of nothing (as all things that are not eternal muſt be) why alſo can you not allow it poſſible, for a material being to be made out of nothing, by an equal power, but that you have the experience of the one in view, and not of

the other? Though, when well conſidered, creation of a ſpirit will be found to require no leſs power than the creation of matter. Nay poſſibly, if we would emancipate ourſelves from vulgar notions, and raiſe our thoughts as far as they would reach, to a cloſer contemplation of things, we might be able to aim at ſome dim and ſeeming conception how matter might at firſt be made, and begin to exiſt by the power of that eternal firſt being: but to give beginning and being to a ſpirit, would be found a more inconceivable effect of omnipotent power. But, this being what would perhaps lead us too far from the notions on which the philoſophy now in the world is built, it would not be pardonable to deviate ſo far from them; or to inquire, ſo far as grammar itſelf would authorize, if the common ſettled opinion oppoſes it: eſpecially in this place, where the received doctrine ſerves well enough to our preſent purpoſe, and leaves this paſt doubt, that the creation or beginning of any one ſubſtance out of nothing, being once admitted, the creation of all other, but the Creator himſelf, may, with the ſame eaſe, be ſuppoſed.

§. 19. But you will ſay, is it not impoſſible to admit of the making any thing out of nothing, ſince we cannot poſſibly conceive it? I anſwer, No: 1. Becauſe it is not reaſonable to deny the power of an infinite being, becauſe we cannot comprehend its operations. We do not deny other effects upon this ground, becauſe we cannot poſſibly conceive the manner of their production. We cannot conceive how any thing but impulſe of body can move body; and yet that is not a reaſon ſufficient to make us deny it impoſſible, againſt the conſtant experience we have of it in ourſelves, in all our voluntary motions, which are produced in us only by the free action or thought of our own minds; and are not, nor can be the effects of the impulſe or determination of the motion of blind matter in or upon our own bodies; for then it could not be in our power or choice to alter it. For example: my right hand writes, whilſt my left hand is ſtill: what cauſes reſt in one, and motion in the other? Nothing but my will, a thought of my mind; my thought only changing, the right hand reſts, and the left hand moves.

moves. This is matter of fact, which cannot be denied: explain this and make it intelligible, and then the next step will be to understand creation. For the giving a new determination to the motion of the animal spirits (which some make use of to explain voluntary motion) clears not the difficulty one jot: to alter the determination of motion, being in this case no easier nor less, than to give motion itself; since the new determination given to the animal spirits must be either immediately by thought, or by some other body put in their way by thought, which was not in their way before, and so must owe its motion to thought; either of which leaves voluntary motion as unintelligible as it was before. In the mean time it is an overvaluing ourselves to reduce all to the narrow measure of our capacities; and to conclude all things impossible to be done, whose manner of doing exceeds our comprehension. This is to make our comprehension infinite, or God finite, when what we can do is limited to what we can conceive of it. If you do not understand the operations of your own finite mind, that thinking thing within you, do not deem it strange, that you cannot comprehend the operations of that eternal infinite mind, who made and governs all things, and whom the heaven of heavens cannot contain.

CHAP. XI.

Of our Knowledge of the Existence of other Things.

§. 1. THE knowledge of our own being we have by intuition. The existence of a God reason clearly makes known to us, as has been shown. It is to be had only by sensation.

The knowledge of the existence of any other thing, we can have only by sensation: for there being no necessary connexion of real existence with any idea a man hath in his memory, nor of any other existence but that of God, with the existence of any particular man; no particular man can know the existence of any other be-

ing, but only when by actual operating upon him, it makes itself perceived by him. For the having the idea of any thing in our mind, no more proves the existence of that thing, than the picture of a man evidences his being in the world, or the visions of a dream make thereby a true history.

Instance, whiteness of this paper.

§. 2. It is therefore the actual receiving of ideas from without, that gives us notice of the existence of other things, and makes us know that something doth exist at that time without us, which causes that idea in us, though perhaps we neither know nor consider how it does it: for it takes not from the certainty of our senses, and the ideas we receive by them, that we know not the manner wherein they are produced: v. g. whilst I write this, I have, by the paper affecting my eyes, that idea produced in my mind, which whatever object causes, I call white; by which I know that that quality or accident (i. e. whose appearance before my eyes always causes that idea) doth really exist, and hath a being without me. And of this, the greatest assurance I can possibly have, and to which my faculties can attain, is the testimony of my eyes, which are the proper and sole judges of this thing, whose testimony I have reason to rely on as so certain, that I can no more doubt, whilst I write this, that I see white and black, and that something really exists, that causes that sensation in me, than that I write or move my hand: which is a certainty as great as human nature is capable of, concerning the existence of any thing, but a man's self alone, and of God.

This though not so certain as demonstration, yet may be called knowledge, and proves the existence of things without us.

§. 3. The notice we have by our senses, of the existing of things without us, though it be not altogether so certain as our intuitive knowledge, or the deductions of our reason, employed about the clear abstract ideas of our own minds; yet it is an assurance that deserves the name of knowledge. If we persuade ourselves, that our faculties act and inform us right, concerning the existence of those objects that affect them, it cannot pass for an ill-grounded confidence: for I think nobody can,

can, in earnest, be so sceptical, as to be uncertain of the existence of those things which he sees and feels. At least, he that can doubt so far (whatever he may have with his own thoughts) will never have any controversy with me; since he can never be sure I say any thing contrary to his own opinion. As to myself, I think God has given me assurance enough of the existence of things without me; since by their different application I can produce in myself both pleasure and pain, which is one great concernment of my present state. This is certain, the confidence that our faculties do not herein deceive us is the greatest assurance we are capable of, concerning the existence of material beings. For we cannot act any thing, but by our faculties; nor talk of knowledge itself, but by the helps of those faculties, which are fitted to apprehend even what knowledge is. But besides the assurance we have from our senses themselves, that they do not err in the information they give us, of the existence of things without us, when they are affected by them, we are farther confirmed in this assurance by other concurrent reasons.

1. Because we cannot have them but by the inlet of the senses.

§. 4. First, it is plain those perceptions are produced in us by exterior causes affecting our senses; because those that want the organs of any sense, never can have the ideas belonging to that sense produced in their minds. This is too evident to be doubted: and therefore we cannot but be assured, that they come in by the organs of that sense, and no other way. The organs themselves, it is plain, do not produce them; for then the eyes of a man in the dark would produce colours, and his nose smell roses in the winter: but we see nobody gets the relish of a pine-apple, till he goes to the Indies, where it is, and tastes it.

2. Because an idea from actual sensation, and another from memory, are very distinct perceptions.

§. 5. Secondly, because sometimes I find, that I cannot avoid the having those ideas produced in my mind. For though when my eyes are shut, or windows fast, I can at pleasure recal to my mind the ideas of light, or the sun, which former sensations had lodged in my memory; so I can at pleasure

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lay by that idea, and take into my view that of the ſmell of a roſe, or taſte of ſugar. But, if I turn my eyes at noon towards the ſun, I cannot avoid the ideas, which the light, or ſun, then produces in me. So that there is a manifeſt difference between the ideas laid up in my memory, (over which, if they were there only, I ſhould have conſtantly the ſame power to diſpoſe of them, and lay them by at pleaſure) and thoſe which force themſelves upon me, and I cannot avoid having. And therefore it muſt needs be ſome exterior cauſe, and the briſk acting of ſome objects without me, whoſe efficacy I cannot reſiſt, that produces thoſe ideas in my mind, whether I will or no. Beſides, there is no-body who doth not perceive the difference in himſelf between contemplating the ſun, as he hath the idea of it in his memory, and actually looking upon it: of which two, his perception is ſo diſtinct, that few of his ideas are more diſtinguiſhable one from another. And therefore he hath certain knowledge, that they are not both memory, or the actions of his mind, and fancies only within him; but that actual ſeeing hath a cauſe without.

3. Pleaſure or pain which accompanies actual ſenſation, accompanies not the returning of thoſe ideas without the external objects.

§. 6. Thirdly, add to this, that many of thoſe ideas are produced in us with pain, which afterwards we remember without the leaſt offence. Thus the pain of heat or cold, when the idea of it is revived in our minds, gives us no diſturbance; which, when felt, was very troubleſome, and is again, when actually repeated; which is occaſioned by the diſorder the external object cauſes in our bodies when applied to it. And we remember the pains of hunger, thirſt, or the head-ach, without any pain at all; which would either never diſturb us, or elſe conſtantly do it, as often as we thought of it, were there nothing more but ideas floating in our minds, and appearances entertaining our fancies, without the real exiſtence of things affecting us from abroad. The ſame may be ſaid of pleaſure, accompanying ſeveral actual ſenſations: and though mathematical demonſtrations depend not upon ſenſe, yet the examining them by diagrams gives great credit to the

the evidence of our ſight, and ſeems to give it a certainty approaching to that of demonſtration itſelf. For it would be very ſtrange, that a man ſhould allow it for an undeniable truth, that two angles of a figure, which he meaſures by lines and angles of a diagram, ſhould be bigger one than the other; and yet doubt of the exiſtence of thoſe lines and angles, which by looking on he makes uſe of to meaſure that by.

4. Our ſenſes aſſiſt one another's teſtimony of the exiſtence of outward things.

§. 7. Fourthly, our ſenſes in many caſes bear witneſs to the truth of each other's report, concerning the exiſtence of ſenſible things without us. He that ſees a fire, may, if he doubt whether it be any thing more than a bare fancy, feel it too; and be convinced, by putting his hand in it. Which certainly could never be put into ſuch exquiſite pain, by a bare idea or phantom, unleſs that the pain be a fancy too: which yet he cannot, when the burn is well, by raiſing the idea of it, bring upon himſelf again.

Thus I ſee, whilſt I write this, I can change the appearance of the paper: and by deſigning the letters tell before-hand what new idea it ſhall exhibit the very next moment, by barely drawing my pen over it: which will neither appear (let me fancy as much as I will) if my hands ſtand ſtill; or though I move my pen, if my eyes be ſhut: nor when thoſe characters are once made on the paper, can I chooſe afterwards but ſee them as they are; that is, have the ideas of ſuch letters as I have made. Whence it is manifeſt, that they are not barely the ſport and play of my own imagination, when I find that the characters, that were made at the pleaſure of my own thought, do not obey them; nor yet ceaſe to be, whenever I ſhall fancy it; but continue to affect the ſenſes conſtantly and regularly, according to the figures I made them. To which if we will add, that the ſight of thoſe ſhall, from another man, draw ſuch ſounds, as I before-hand deſign they ſhall ſtand for; there will be little reaſon left to doubt, that thoſe words I write do really exiſt without me, when they cauſe a long ſeries of regular ſounds to affect my ears, which could not be the effect of

of my imagination, nor could my memory retain them in that order.

This certainty is as great as our condition needs.

§. 8. But yet, if after all this any one will be so sceptical, as to distrust his senses, and to affirm that all we see and hear, feel and taste, think and do, during our whole being, is but the series and deluding appearances of a long dream, whereof there is no reality; and therefore will question the existence of all things, or our knowledge of any thing; I must desire him to consider, that if all be a dream, then he doth but dream, that he makes the question; and so it is not much matter, that a waking man should answer him. But yet, if he pleases, he may dream that I make him this answer, that the certainty of things existing in rerum natura, when we have the testimony of our senses for it, is not only as great as our frame can attain to, but as our condition needs. For our faculties being suited not to the full extent of being, nor to a perfect, clear, comprehensive knowledge of things free from all doubt and scruple; but to the preservation of us, in whom they are; and accommodated to the use of life; they serve to our purpose well enough, if they will but give us certain notice of those things, which are convenient or inconvenient to us. For he that sees a candle burning, and hath experimented the force of its flame, by putting his finger in it, will little doubt that this is something existing without him, which does him harm, and puts him to great pain: which is assurance enough, when no man requires greater certainty to govern his actions by, than what is as certain as his actions themselves. And if our dreamer pleases to try, whether the glowing heat of a glass furnace be barely a wandering imagination in a drowsy man's fancy; by putting his hand into it, he may perhaps be wakened into a certainty greater than he could wish, that it is something more than bare imagination. So that this evidence is as great as we can desire, being as certain to us as our pleasure or pain, i. e. happiness or misery; beyond which we have no concernment, either of knowing or being. Such an assurance of the existence of things without us, is sufficient to direct us

in

in the attaining the good, and avoiding the evil, which is caused by them; which is the important concernment we have of being made acquainted with them.

But reaches no farther than actual sensation.

§. 9. In fine then, when our senses do actually convey into our understandings any idea, we cannot but be satisfied that there doth something at that time really exist without us, which doth affect our senses, and by them give notice of itself to our apprehensive faculties, and actually produce that idea which we then perceive: and we cannot so far distrust their testimony, as to doubt, that such collections of simple ideas, as we have observed by our senses to be united together, do really exist together. But this knowledge extends as far as the present testimony of our senses, employed about particular objects that do then affect them, and no farther. For if I saw such a collection of simple ideas, as is wont to be called man, existing together one minute since, and am now alone, I cannot be certain that the same man exists now, since there is no necessary connexion of his existence a minute since, with his existence now: by a thousand ways he may cease to be, since I had the testimony of my senses for his existence. And if I cannot be certain, that the man I saw last to-day is now in being, I can less be certain that he is so, who hath been longer removed from my senses, and I have not seen since yesterday, or since the last year: and much less can I be certain of the existence of men that I never saw. And therefore though it be highly probable, that millions of men do now exist, yet, whilst I am alone writing this, I have not that certainty of it which we strictly call knowledge; though the great likelihood of it puts me past doubt, and it be reasonable for me to do several things upon the confidence that there are men (and men also of my acquaintance, with whom I have to do) now in the world: but this is but probability, not knowledge.

Folly to expect demonstration in every thing.

§. 10. Whereby yet we may observe, how foolish and vain a thing it is, for a man of a narrow knowledge, who having reason given him to judge of the different evidence and probability of things, and to be swayed accordingly;

how vain, I ſay, it is to expect demonſtration and certainty in things not capable of it; and refuſe aſſent to very rational propoſitions, and act contrary to very plain and clear truths, becauſe they cannot be made out ſo evident, as to ſurmount every the leaſt (I will not ſay reaſon, but) pretence of doubting. He that in the ordinary affairs of life would admit of nothing but direct plain demonſtration, would be ſure of nothing in this world, but of periſhing quickly. The wholeſomeneſs of his meat or drink would not give him reaſon to venture on it: and I would fain know, what it is he could do upon ſuch grounds, as are capable of no doubt, no objection.

Paſt exiſtence is known by memory.

§. 11. As when our ſenſes are actually employed about any object, we do know that it does exiſt; ſo by our memory we may be aſſured, that heretofore things that affected our ſenſes have exiſted. And thus we have knowledge of the paſt exiſtence of ſeveral things, whereof our ſenſes having informed us, our memories ſtill retain the ideas; and of this we are paſt all doubt, ſo long as we remember well. But this knowledge alſo reaches no farther than our ſenſes have formerly aſſured us. Thus ſeeing water at this inſtant, it is an unqueſtionable truth to me, that water doth exiſt: and remembering that I ſaw it yeſterday, it will alſo be always true; and as long as my memory retains it, always an undoubted propoſition to me, that water did exiſt the 10th of July, 1688, as it will alſo be equally true, that a certain number of very fine colours did exiſt, which at the ſame time I ſaw upon a bubble of that water: but, being now quite out of the ſight both of the water and bubbles too, it is no more certainly known to me that the water doth now exiſt, than that the bubbles or colours therein do ſo; it being no more neceſſary that water ſhould exiſt to-day, becauſe it exiſted yeſterday, than that the colours or bubbles exiſt to-day, becauſe they exiſted yeſterday; though it be exceedingly much more probable, becauſe water hath been obſerved to continue long in exiſtence, but bubbles and the colours on them quickly ceaſe to be.

§. 12.

§. 12. What ideas we have of spirits, and how we come by them, I have already shown. But though we have those ideas in our minds, and know we have them there, the having the ideas of spirits does not make us know, that any such things do exist without us, or that there are any finite spirits, or any other spiritual beings but the eternal God. We have ground from revelation, and several other reasons, to believe with assurance that there are such creatures: but, our senses not being able to discover them, we want the means of knowing their particular existences. For we can no more know, that there are finite spirits really existing, by the idea we have of such beings in our minds, than by the ideas any one has of fairies, or centaurs, he can come to know that things answering those ideas do really exist.

The existence of spirits not knowable.

And therefore concerning the existence of finite spirits, as well as several other things, we must content ourselves with the evidence of faith; but universal certain propositions concerning this matter are beyond our reach. For however true it may be, v. g. that all the intelligent spirits that God ever created, do still exist; yet it can never make a part of our certain knowledge. These and the like propositions we may assent to as highly probable, but are not, I fear, in this state capable of knowing. We are not then to put others upon demonstrating, nor ourselves upon search of universal certainty in all those matters, wherein we are not capable of any other knowledge, but what our senses give us in this or that particular.

§. 13. By which it appears, that there are two sorts of propositions. 1. There is one sort of propositions concerning the existence of any thing answerable to such an idea: as having the idea of an elephant, phœnix, motion, or an angel, in my mind, the first and natural inquiry is, Whether such a thing does any where exist? And this knowledge is only of particulars. No existence of any thing without us, but only of God, can certainly be known farther than our senses inform us. 2. There is another sort of propositions, wherein is expressed

Particular propositions concerning existence are knowable.

prefſed the agreement or diſagreement of our abſtract ideas, and their dependence on one another. Such propoſitions may be univerſal and certain. So having the idea of God and myſelf, of fear and obedience, I cannot but be ſure that God is to be feared and obeyed by me: and this propoſition will be certain, concerning man in general, if I have made an abſtract idea of ſuch a ſpecies, whereof I am one particular. But yet this propoſition, how certain ſoever, that men ought to fear and obey God, proves not to me the exiſtence of men in the world, but will be true of all ſuch creatures, whenever they do exiſt: which certainty of ſuch general propoſitions, depends on the agreement or diſagreement to be diſcovered in thoſe abſtract ideas.

And general propoſitions concerning abſtract ideas.

§. 14. In the former caſe, our knowledge is the conſequence of the exiſtence of things producing ideas in our minds by our ſenſes: in the latter, knowledge is the conſequence of the ideas (be they what they will) that are in our minds producing there general certain propoſitions. Many of theſe are called æternæ veritates, and all of them indeed are ſo; not from being written all or any of them in the minds of all men, or that they were any of them propoſitions in one's mind, till he, having got the abſtract ideas, joined or ſeparatrd them by affirmation or negation. But whereſoever we can ſuppoſe ſuch a creature as man is, endowed with ſuch faculties, and thereby furniſhed with ſuch ideas as we have, we muſt conclude, he muſt needs, when he applies his thoughts to the conſideration of his ideas, know the truth of certain propoſitions, that will ariſe from the agreement or diſagreement which he will perceive in his own ideas. Such propoſitions are therefore called eternal truths, not becauſe they are eternal propoſitions actually formed, and antecedent to the underſtanding, that at any time makes them; nor becauſe they are imprinted on the mind from any patterns, that are any where out of the mind, and exiſted before: but becauſe being once made about abſtract ideas, ſo as to be true, they will, whenever they can be ſuppoſed to be made again at any time paſt or to come, by a mind having

thoſe ideas, always actually be true. For names being ſuppoſed to ſtand perpetually for the ſame ideas, and the ſame ideas having immutably the ſame habitudes one to another; propoſitions concerning any abſtract ideas, that are once true, muſt needs be eternal verities.

CHAP. XII.

Of the Improvement of our Knowledge.

§. 1. IT having been the common received opinion amongſt men of letters, that maxims were the foundation of all knowledge; and that the ſciences were each of them built upon certain præcognita, from whence the underſtanding was to take its riſe, and by which it was to conduct itſelf, in its inquiries into the matters belonging to that ſcience; the beaten road of the ſchools has been, to lay down in the beginning one or more general propoſitions, as foundations whereon to build the knowledge that was to be had of that ſubject. Theſe doctrines, thus laid down for foundations of any ſcience, were called principles, as the beginnings from which we muſt ſet out, and look no farther backwards in our inquiries, as we have already obſerved.

Knowledge is not from maxims.

§. 2. One thing which might probably give an occaſion to this way of proceeding in other ſciences, was (as I ſuppoſe) the good ſucceſs it ſeemed to have in mathematics, wherein men, being obſerved to attain a great certainty of knowledge, theſe ſciences came by pre-eminence to be called Μαθήματα, and Μάθησις, learning, or things learned, thoroughly learned, as having of all others the greateſt certainty, clearneſs, and evidence in them.

(The occaſion of that opinion.)

§. 3. But if any one will conſider, he will (I gueſs) find, that the great advancement and certainty of real knowledge, which men arrived to in theſe ſciences, was not owing

But from the comparing clear and diſtinct ideas.

to the influence of these principles, nor derived from any peculiar advantage they received from two or three general maxims, laid down in the beginning; but from the clear, distinct, complete ideas their thoughts were employed about, and the relation of equality and excess so clear between some of them, that they had an intuitive knowledge, and by that a way to discover it in others, and this without the help of those maxims. For I ask, is it not possible for a young lad to know, that his whole body is bigger than his little finger, but by virtue of this axiom, that the whole is bigger than a part; nor be assured of it, till he has learned that maxim? Or cannot a country wench know, that having received a shilling from one that owes her three, and a shilling also from another that owes her three, the remaining debts in each of their hands are equal? Cannot she know this, I say, unless she fetch the certainty of it from this maxim, that if you take equals from equals, the remainder will be equals, a maxim which possibly she never heard or thought of? I desire any one to consider, from what has been elsewhere said, which is known first and clearest by most people, the particular instance, or the general rule; and which it is that gives life and birth to the other. These general rules are but the comparing our more general and abstract ideas, which are the workmanship of the mind made, and names given to them, for the easier dispatch in its reasonings, and drawing into comprehensive terms, and short rules, its various and multiplied observations. But knowledge began in the mind, and was founded on particulars; though afterwards, perhaps, no notice be taken thereof: it being natural for the mind (forward still to enlarge its knowledge) most attentively to lay up those general notions, and make the proper use of them, which is to disburden the memory of the cumbersome load of particulars. For I desire it may be considered what more certainty there is to a child, or any one, that his body, little finger and all, is bigger than his little finger alone, after you have given to his body the name whole, and to his little finger the name part, than he could have had before; or what new knowledge concerning his body

body can these two relative terms give him, which he could not have without them? Could he not know that his body was bigger than his little finger, if his language were yet so imperfect, that he had no such relative terms as whole and part? I ask farther, when he has got these names, how is he more certain that his body is a whole, and his little finger a part, than he was or might be certain, before he learnt those terms, that his body was bigger than his little finger? Any one may as reasonably doubt or deny that his little finger is a part of his body, as that it is less than his body. And he that can doubt whether it be less, will as certainly doubt whether it be a part. So that the maxim, the whole is bigger than a part, can never be made use of to prove the little finger less than the body, but when it is useless, by being brought to convince one of a truth which he knows already. For he that does not certainly know that any parcel of matter, with another parcel of matter joined to it, is bigger than either of them alone, will never be able to know it by the help of these two relative terms whole and part, make of them what maxim you please.

Dangerous to build upon precarious principles.

§. 4. But be it in the mathematics as it will, whether it be clearer, that taking an inch from a black line of two inches, and an inch from a red line of two inches, the remaining parts of the two lines will be equal, or that if you take equals from equals, the remainder will be equals: which, I say, of these two is the clearer and first known, I leave it to any one to determine, it not being material to my present occasion. That which I have here to do, is to inquire, whether if it be the readiest way to knowledge to begin with general maxims, and build upon them, it be yet a safe way to take the principles, which are laid down in any other science as unquestionable truths; and so receive them without examination, and adhere to them, without suffering them to be doubted of, because mathematicians have been so happy, or so fair, to use none but self-evident and undeniable. If this be so, I know not what may not pass

for truth in morality, what may not be introduced and proved in natural philoſophy.

Let that principle of ſome of the philoſophers, that all is matter, and that there is nothing elſe, be received for certain and indubitable, and it will be eaſy to be ſeen by the writings of ſome that have revived it again in our days, what conſequences it will lead us into. Let any one, with Polemo, take the world; or with the ſtoics, the æther, or the ſun; or with Anaximenes, the air; to be God; and what a divinity, religion and worſhip muſt we needs have! Nothing can be ſo dangerous as principles thus taken up without queſtioning or examination; eſpecially if they be ſuch as concern morality, which influence men's lives, and give a bias to all their actions. Who might not juſtly expect another kind of life in Ariſtippus, who placed happineſs in bodily pleaſure; and in Antiſthenes, who made virtue ſufficient to felicity? And he who, with Plato, ſhall place beatitude in the knowledge of God, will have his thoughts raiſed to other contemplations, than thoſe who look not beyond this ſpot of earth, and thoſe periſhing things which are to be had in it. He that, with Archelaus, ſhall lay it down as a principle, that right and wrong, honeſt and diſhoneſt, are defined only by laws, and not by nature, will have other meaſures of moral rectitude, and pravity, than thoſe who take it for granted, that we are under obligations antecedent to all human conſtitutions.

This is no certain way to truth.

§. 5. If therefore thoſe that paſs for principles are not certain (which we muſt have ſome way to know, that we may be able to diſtinguiſh them from thoſe that are doubtful) but are only made ſo to us by our blind aſſent, we are liable to be miſled by them; and inſtead of being guided into truth, we ſhall, by principles, be only confirmed in miſtake and errour.

But to compare clear complete ideas under ſteady names.

§. 6. But ſince the knowledge of the certainty of principles, as well as of all other truths, depends only upon the perception we have of the agreement or diſagreement of our ideas, the way to improve our knowledge

ledge is not, I am ſure, blindly, and with an implicit faith, to receive and ſwallow principles; but is, I think, to get and fix in our minds clear, diſtinct, and complete ideas, as far as they are to be had, and annex to them proper and conſtant names. And thus, perhaps, without any other principles, but barely conſidering thoſe ideas, and by comparing them one with another, finding their agreement and diſagreement, and their ſeveral relations and habitudes; we ſhall get more true and clear knowledge, by the conduct of this one rule, than by taking up principles, and thereby putting our minds into the diſpoſal of others.

'The true method of advancing knowledge is by conſidering our abſtract ideas.

§. 7. We muſt therefore, if we will proceed as reaſon adviſes, adapt our methods of inquiry to the nature of the ideas we examine, and the truth we ſearch after. General and certain truths are only founded in the habitudes and relations of abſtract ideas. A ſagacious and methodical application of our thoughts, for the finding out theſe relations, is the only way to diſcover all, that can be put with truth and certainty concerning them into general propoſitions. By what ſteps we are to proceed in theſe, is to be learned in the ſchools of the mathematicians, who from very plain and eaſy beginnings, by gentle degrees, and a continued chain of reaſonings, proceed to the diſcovery and demonſtration of truths, that appear at firſt ſight beyond human capacity. The art of finding proofs, and the admirable methods they have invented for the ſingling out, and laying in order, thoſe intermediate ideas, that demonſtratively ſhow the equality or inequality of unapplicable quantities, is that which has carried them ſo far, and produced ſuch wonderful and unexpected diſcoveries: but whether ſomething like this, in reſpect of other ideas, as well as thoſe of magnitude, may not in time be found out, I will not determine. This, I think, I may ſay, that if other ideas, that are the real as well as nominal eſſences of their ſpecies, were purſued in the way familiar to mathematicians, they would carry our thoughts farther, and with greater evidence and clearneſs, than poſſibly we are apt to imagine.

By which morality also may be made clearer.

§. 8. This gave me the confidence to advance that conjecture, which I suggest, chap. iii. viz. that morality is capable of demonstration, as well as mathematics. For the ideas that ethics are conversant about being all real essences, and such as I imagine have a discoverable connexion and agreement one with another; so far as we can find their habitudes and relations, so far we shall be possessed of certain, real, and general truths: and I doubt not, but, if a right method were taken, a great part of morality might be made out with that clearness, that could leave, to a considering man, no more reason to doubt, than he could have to doubt of the truth of propositions in mathematics, which have been demonstrated to him.

But knowledge of bodies is to be improved only by experience.

§. 9. In our search after the knowledge of substances, our want of ideas, that are suitable to such a way of proceeding, obliges us to a quite different method. We advance not here, as in the other (where our abstract ideas are real as well as nominal essences) by contemplating our ideas, and considering their relations and correspondencies; that helps us very little, for the reasons, that in another place we have at large set down. By which I think it is evident, that substances afford matter of very little general knowledge; and the bare contemplation of their abstract ideas will carry us but a very little way in the search of truth and certainty. What then are we to do for the improvement of our knowledge in substantial beings? Here we are to take a quite contrary course; the want of ideas of their real essences, sends us from our own thoughts to the things themselves, as they exist. Experience here must teach me what reason cannot; and it is by trying alone, that I can certainly know, what other qualities co-exist with those of my complex idea, v. g. whether that yellow, heavy, fusible body, I call gold, be malleable, or no; which experience (which way ever it prove, in that particular body, I examine) makes me not certain, that it is so in all, or any other yellow, heavy, fusible bodies, but that which I have tried.

tried. Becauſe it is no conſequence one way or the other from my complex idea; the neceſſity or inconſiſtence of malleability hath no viſible connexion with the combination of that colour, weight, and fuſibility in any body. What I have ſaid here of the nominal eſſence of gold, ſuppoſed to conſiſt of a body of ſuch a determinate colour, weight, and fuſibility, will hold true, if malleableneſs, fixedneſs, and ſolubility in aqua regia be added to it. Our reaſonings from theſe ideas will carry us but a little way in the certain diſcovery of the other properties in thoſe maſſes of matter wherein all theſe are to be found. Becauſe the other properties of ſuch bodies, depending not on theſe, but on that unknown real eſſence, on which theſe alſo depend, we cannot by them diſcover the reſt; we can go no farther than the ſimple ideas of our nominal eſſence will carry us, which is very little beyond themſelves; and ſo afford us but very ſparingly any certain, univerſal, and uſeful truths. For upon trial having found that particular piece (and all others of that colour, weight, and fuſibility, that I ever tried) malleable, that alſo makes now perhaps a part of my complex idea, part of my nominal eſſence of gold: whereby though I make my complex idea, to which I affix the name gold, to conſiſt of more ſimple ideas than before; yet ſtill, it not containing the real eſſence of any ſpecies of bodies, it helps me not certainly to know (I ſay to know, perhaps it may to conjecture) the other remaining properties of that body, farther than they have a viſible connexion with ſome or all of the ſimple ideas, that make up my nominal eſſence. For example, I cannot be certain from this complex idea, whether gold be fixed, or no; becauſe, as before, there is no neceſſary connexion or inconſiſtence to be diſcovered betwixt a complex idea of a body yellow, heavy, fuſible, malleable; betwixt theſe, I ſay, and fixedneſs; ſo that I may certainly know, that in whatſoever body theſe are found, there fixedneſs is ſure to be. Here again for aſſurance, I muſt apply myſelf to experience; as far as that reaches, I may have certain knowledge, but no farther.

This may procure us conveni nce, not ſcience.

§. 10. I deny not but a man, accuſtomed to rational and regular experiments, ſhall be able to ſee farther into the nature of bodies, and gueſs righter at their yet unknown properties, than one that is a ſtranger to them: but yet, as I have ſaid, this is but judgment and opinion, not knowledge and certainty. This way of getting and improving our knowledge in ſubſtances only by experience and hiſtory, which is all that the weakneſs of our faculties in this ſtate of mediocrity, which we are in in this world, can attain to; makes me ſuſpect, that natural philoſophy is not capable of being made a ſcience. We are able, I imagine, to reach very little general knowledge concerning the ſpecies of bodies, and their ſeveral properties. Experiments and hiſtorical obſervations we may have, from which we may draw advantages of eaſe and health, and thereby increaſe our ſtock of conveniencies for this life; but beyond this I fear our talents reach not, nor are our faculties, as I gueſs, able to advance.

We are fitted for moral knowledge and natural improvements.

§. 11. From whence it is obvious to conclude, that ſince our faculties are not fitted to penetrate into the internal fabrick and real eſſences of bodies; but yet plainly diſcover to us the being of a God, and the knowledge of ourſelves, enough to lead us into a full and clear diſcovery of our duty and great concernment; it will become us, as rational creatures, to employ thoſe faculties we have about what they are moſt adapted to, and follow the direction of nature, where it ſeems to point us out the way. For it is rational to conclude that our proper employment lies in thoſe inquiries, and in that ſort of knowledge which is moſt ſuited to our natural capacities, and carries in it our greateſt intereſt, i. e. the condition of our eternal eſtate. Hence I think I may conclude, that morality is the proper ſcience and buſineſs of mankind in general; (who are both concerned, and fitted to ſearch out their ſummum bonum) as ſeveral arts, converſant about ſeveral parts of nature, are the lot and private talent of particular men, for the common uſe of human life, and their own

own particular ſubſiſtence in this world. Of what conſequence the diſcovery of one natural body, and its properties, may be to human life, the whole great continent of America is a convincing inſtance: whoſe ignorance in uſeful arts, and want of the greateſt part of the conveniencies of life, in a country that abounded with all ſorts of natural plenty, I think, may be attributed to their ignorance of what was to be found in a very ordinary deſpicable ſtone, I mean the mineral of iron. And whatever we think of our parts or improvements in this part of the world, where knowledge and plenty ſeem to vie with each other; yet to any one, that will ſeriouſly reflect on it, I ſuppoſe, it will appear paſt doubt, that were the uſe of iron loſt among us, we ſhould in a few ages be unavoidably reduced to the wants and ignorance of the ancient ſavage Americans, whoſe natural endowments and proviſions come no way ſhort of thoſe of the moſt flouriſhing and polite nations. So that he who firſt made known the uſe of that contemptible mineral, may be truly ſtyled the father of arts, and author of plenty.

But muſt beware of hypotheſes and wrong principles.

§. 12. I would not therefore be thought to diſeſteem, or diſſuade the ſtudy of nature. I readily agree the contemplation of his works gives us occaſion to admire, revere, and glorify their author: and, if rightly directed, may be of greater benefit to mankind, than the monuments of exemplary charity, that have at ſo great charge been raiſed by the founders of hoſpitals and almshouſes. He that firſt invented printing, diſcovered the uſe of the compaſs, or made public the virtue and right uſe of kin kina, did more for the propagation of knowledge, for the ſupply and increaſe of uſeful commodities, and ſaved more from the grave, than thoſe who built colleges, work-houſes and hoſpitals. All that I would ſay, is, that we ſhould not be too forwardly poſſeſſed with the opinion, or expectation of knowledge, where it is not to be had; or by ways that will not attain to it: that we ſhould not take doubtful ſyſtems for complete ſciences, nor unintelligible notions for ſcientifical demonſtrations. In the knowledge of bodies, we muſt

be

be content to glean what we can from particular experiments: since we cannot, from a discovery of their real essences, grasp at a time whole sheaves, and in bundles comprehend the nature and properties of whole species together. Where our inquiry is concerning co-existence, or repugnancy to co-exist, which by contemplation of our ideas we cannot discover; there experience, observation, and natural history must give us by our senses, and by retail, an insight into corporeal substances. The knowledge of bodies we must get by our senses, warily employed in taking notice of their qualities and operations on one another: and what we hope to know of separate spirits in this world we must, I think, expect only from revelation. He that shall consider how little general maxims, precarious principles, and hypotheses laid down at pleasure, have promoted true knowledge, or helped to satisfy the inquiries of rational men after real improvements; how little, I say, the setting out at that end has, for many ages together, advanced men's progress towards the knowledge of natural philosophy; will think we have reason to thank those, who in this latter age have taken another course, and have trod out to us, though not an easier way to learned ignorance, yet a surer way to profitable knowledge.

The true use of hypotheses.

§. 13. Not that we may not, to explain any phænomena of nature, make use of any probable hypothesis whatsoever: hypotheses, if they are well made, are at least great helps to the memory, and often direct us to new discoveries. But my meaning is, that we should not take up any one too hastily (which the mind, that would always penetrate into the causes of things, and have principles to rest on, is very apt to do) till we have very well examined particulars, and made several experiments, in that thing which we would explain by our hypothesis, and see whether it will agree to them all; whether our principles will carry us quite through, and not be as inconsistent with one phænomenon of nature, as they seem to accommodate and explain another. And at least that we take care, that the name of principles deceive us not, nor impose on us, by making us receive

that

that for an unqueſtionable truth, which is really at beſt but a very doubtful conjecture, ſuch as are moſt (I had almoſt ſaid all) of the hypotheſes in natural philoſophy.

Clear and diſtinct ideas with ſettled names, and the finding of thoſe which ſhow their agreement or diſagreement, are the ways to enlarge our knowledge.

§. 14. But whether natural philoſophy be capable of certainty or no, the ways to enlarge our knowledge, as far as we are capable, ſeem to me, in ſhort, to be theſe two:

Firſt, the firſt is to get and ſettle in our minds determined ideas of thoſe things, whereof we have general or ſpecific names; at leaſt ſo many of them as we would conſider and improve our knowledge in, or reaſon about. And if they be ſpecific ideas of ſubſtances, we ſhould endeavour alſo to make them as complete as we can, whereby I mean, that we ſhould put together as many ſimple ideas, as, being conſtantly obſerved to co-exiſt, may perfectly determine the ſpecies: and each of thoſe ſimple ideas, which are the ingredients of our complex ones, ſhould be clear and diſtinct in our minds. For it being evident, that our knowledge cannot exceed our ideas; as far as they are either imperfect, confuſed, or obſcure, we cannot expect to have certain, perfect, or clear knowledge.

Secondly, the other is the art of finding out thoſe intermediate ideas, which may ſhow us the agreement or repugnancy of other ideas, which cannot be immediately compared.

Mathematics, an inſtance of it.

§. 15. That theſe two (and not the relying on maxims, and drawing conſequences from ſome general propoſitions) are the right methods of improving our knowledge in the ideas of other modes beſides thoſe of quantity, the conſideration of mathematical knowledge will eaſily inform us. Where firſt we ſhall find, that he that has not a perfect and clear idea of thoſe angles, or figures of which he deſires to know any thing, is utterly thereby incapable of any knowledge about them. Suppoſe but a man not to have a perfect exact idea of a right angle, a ſcalenum, or trapezium; and there is nothing more certain, than that he

he will in vain seek any demonstration about them. Farther, it is evident, that it was not the influence of those maxims, which are taken for principles in mathematics, that hath led the masters of that science into those wonderful discoveries they have made. Let a man of good parts know all the maxims generally made use of in mathematics ever so perfectly, and contemplate their extent and consequences as much as he pleases, he will by their assistance, I suppose, scarce ever come to know that the square of the hypothenuse in a right-angled triangle is equal to the squares of the two other sides. The knowledge, that the whole is equal to all its parts, and if you take equals from equals, the remainder will be equal, &c. helped him not, I presume, to this demonstration: and a man may, I think, pore long enough on those axioms, without ever seeing one jot the more of mathematical truths. They have been discovered by the thoughts otherwise applied: the mind had other objects, other views before it, far different from those maxims, when it first got the knowledge of such truths in mathematics, which men well enough acquainted with those received axioms, but ignorant of their method who first made these demonstrations, can never sufficiently admire. And who knows what methods, to enlarge our knowledge in other parts of science, may hereafter be invented, answering that of algebra in mathematics, which so readily finds out the ideas of quantities to measure others by; whose equality or proportion we could otherwise very hardly, or, perhaps, never come to know?

CHAP. XIII.

Some farther Considerations concerning our Knowledge.

Our knowledge partly necessary, partly voluntary.

§. 1. OUR knowledge, as in other things, so in this, has so great a conformity with our sight, that it is neither wholly necessary, nor wholly voluntary. If our

our knowledge were altogether necessary, all men's knowledge would not only be alike, but every man would know all that is knowable: and if it were wholly voluntary, some men so little regard or value it, that they would have extreme little, or none at all. Men that have senses cannot choose but receive some ideas by them; and if they have memory, they cannot but retain some of them; and if they have any distinguishing faculty, cannot but perceive the agreement or disagreement of some of them one with another: as he that has eyes, if he will open them by day, cannot but see some objects, and perceive a difference in them. But though a man, with his eyes open in the light, cannot but see; yet there be certain objects, which he may choose whether he will turn his eyes to; there may be in his reach a book containing pictures and discourses, capable to delight or instruct him, which yet he may never have the will to open, never take the pains to look into.

The application voluntary; but we know as things are, not as we please.

§. 2. There is also another thing in a man's power, and that is, though he turns his eyes sometimes towards an object, yet he may choose whether he will curiously survey it, and with an intent application endeavour to observe accurately all that is visible in it. But yet what he does see, he cannot see otherwise than he does. It depends not on his will to see that black which appears yellow; nor to persuade himself, that what actually scalds him, feels cold. The earth will not appear painted with flowers, nor the fields covered with verdure, whenever he has a mind to it; in the cold winter he cannot help seeing it white and hoary, if he will look abroad. Just thus is it with our understanding; all that is voluntary in our knowledge, is the employing or withholding any of our faculties, from this or that sort of objects, and a more or less accurate survey of them: but, they being employed, our will hath no power to determine the knowledge of the mind one way or other; that is done only by the objects themselves, as far as they are clearly discovered. And therefore, as far as men's senses are conversant about external objects, the mind cannot but receive those

ideas which are preſented by them, and be informed of the exiſtence of things without: and ſo far as men's thoughts converſe with their own determined ideas, they cannot but, in ſome meaſure, obſerve the agreement or diſagreement that is to be found amongſt ſome of them, which is ſo far knowledge: and if they have names for thoſe ideas which they have thus conſidered, they muſt needs be aſſured of the truth of thoſe propoſitions, which expreſs that agreement or diſagreement they perceive in them, and be undoubtedly convinced of thoſe truths. For what a man ſees, he cannot but ſee; and what he perceives, he cannot but know that he perceives.

Inſtance, in numbers.

§. 3. Thus he that has got the ideas of numbers, and hath taken the pains to compare one, two, and three to ſix, cannot chooſe but know that they are equal: he that hath got the idea of a triangle, and found the ways to meaſure its angles, and their magnitudes, is certain that its three angles are equal to two right ones; and can as little doubt of that, as of this truth, "that it is impoſſible for "the ſame thing to be, and not to be."

In natural religion.

He alſo that hath the idea of an intelligent, but frail and weak being, made by and depending on another, who is eternal, omnipotent, perfectly wiſe and good, will as certainly know that man is to honour, fear, and obey God, as that the ſun ſhines when he ſees it. For if he hath but the ideas of two ſuch beings in his mind, and will turn his thoughts that way, and conſider them, he will as certainly find that the inferior, finite and dependent, is under an obligation to obey the ſupreme and infinite, as he is certain to find, that three, four, and ſeven are leſs than fifteen, if he will conſider and compute thoſe numbers; nor can he be ſurer in a clear morning that the ſun is riſen, if he will but open his eyes, and turn them that way. But yet theſe truths, being ever ſo certain, ever ſo clear, he may be ignorant of either, or all of them, who will never take the pains to employ his faculties, as he ſhould, to inform himſelf about them.

CHAP.

CHAP. XIV.

Of Judgment.

§. 1. THE underſtanding faculties being given to man, not barely for ſpeculation, but alſo for the conduct of his life, man would be at a great loſs, if he had nothing to direct him but what has the certainty of true knowledge. For that being very ſhort and ſcanty, as we have ſeen, he would be often utterly in the dark, and in moſt of the actions of his life, perfectly at a ſtand, had he nothing to guide him in the abſence of clear and certain knowledge. He that will not eat, till he has demonſtration that it will nouriſh him; he that will not ſtir, till he infallibly knows the buſineſs he goes about will ſucceed; will have little elſe to do, but to ſit ſtill and periſh.

Our knowledge being ſhort, we want ſomething elſe.

§. 2. Therefore as God has ſet ſome things in broad day-light; as he has given us ſome certain knowledge, though limited to a few things in compariſon, probably, as a taſte of what intellectual creatures are capable of, to excite in us a deſire and endeavour after a better ſtate: ſo in the greateſt part of our concernments he has afforded us only the twilight, as I may ſo ſay, of probability; ſuitable, I preſume, to that ſtate of mediocrity and probationerſhip, he has been pleaſed to place us in here; wherein, to check our over-confidence and preſumption, we might by every day's experience be made ſenſible of our ſhort-ſightedneſs and liableneſs to errour; the ſenſe whereof might be a conſtant admonition to us, to ſpend the days of this our pilgrimage with induſtry and care, in the ſearch and following of that way, which might lead us to a ſtate of greater perfection: it being highly rational to think, even were revelation ſilent in the caſe, that as men employ thoſe talents God has given them here, they ſhall accordingly receive their rewards at the cloſe of the day, when their ſun ſhall ſet, and night ſhall put an end to their labours.

What uſe to be made of this twilight ſtate.

Judgment supplies the want of knowledge.

§. 3. The faculty which God has given man to supply the want of clear and certain knowledge, in cases where that cannot be had, is judgment: whereby the mind takes its ideas to agree or disagree; or which is the same, any proposition to be true or false, without perceiving a demonstrative evidence in the proofs. The mind sometimes exercises this judgment out of necessity, where demonstrative proofs and certain knowledge are not to be had; and sometimes out of laziness, unskilfulness, or haste, even where demonstrative and certain proofs are to be had. Men often stay not warily to examine the agreement or disagreement of two ideas, which they are desirous or concerned to know; but either incapable of such attention as is requisite in a long train of gradations, or impatient of delay, lightly cast their eyes on, or wholly pass by the proofs; and so without making out the demonstration, determine of the agreement or disagreement of two ideas, as it were by a view of them as they are at a distance, and take it to be the one or the other, as seems most likely to them upon such a loose survey. This faculty of the mind, when it is exercised immediately about things, is called judgment; when about truths delivered in words, is most commonly called assent or dissent: which being the most usual way, wherein the mind has occasion to employ this faculty, I shall under these terms treat of it, as least liable in our language to equivocation.

Judgment is the presuming things to be so, without perceiving it.

§. 4. Thus the mind has two faculties, conversant about truth and falshood.

First, knowledge, whereby it certainly perceives, and is undoubtedly satisfied of the agreement or disagreement of any ideas.

Secondly, judgment, which is the putting ideas together, or separating them from one another in the mind, when their certain agreement or disagreement is not perceived, but presumed to be so; which is, as the word imports, taken to be so before it certainly appears. And if it so unites, or separates them, as in reality things are, it is right judgment.

CHAP.

CHAP. XV.

Of Probability.

Probability is the appearance of agreement upon fallible proofs.

§. 1. AS demonſtration is the ſhowing the agreement or diſagreement of two ideas, by the intervention of one or more proofs, which have a conſtant, immutable, and viſible connexion one with another; ſo probability is nothing but the appearance of ſuch an agreement or diſagreement, by the intervention of proofs, whoſe connexion is not conſtant and immutable, or at leaſt is not perceived to be ſo, but is, or appears for the moſt part to be ſo, and is enough to induce the mind to judge the propoſition to be true or falſe, rather than the contrary. For example: in the demonſtration of it, a man perceives the certain immutable connexion there is of equality between the three angles of a triangle, and thoſe intermediate ones which are made uſe of to ſhow their equality to two right ones; and ſo by an intuitive knowledge of the agreement or diſagreement of the intermediate ideas in each ſtep of the progreſs, the whole ſeries is continued with an evidence, which clearly ſhows the agreement or diſagreement of thoſe three angles in equality to two right ones: and thus he has certain knowledge that it is ſo. But another man, who never took the pains to obſerve the demonſtration, hearing a mathematician, a man of credit, affirm the three angles of a triangle to be equal to two right ones, aſſents to it, i. e. receives it for true. In which caſe the foundation of his aſſent is the probability of the thing, the proof being ſuch as for the moſt part carries truth with it: the man, on whoſe teſtimony he receives it, not being wont to affirm any thing contrary to, or beſides his knowledge, eſpecially in matters of this kind. So that that which cauſes his aſſent to this propoſition, that the three angles of a triangle are equal to two right ones, that which makes him take theſe ideas to agree, without knowing

them to do ſo, is the wonted veracity of the ſpeaker in other caſes, or his ſuppoſed veracity in this.

It is to ſupply the want of knowledge.

§. 2. Our knowledge, as has been ſhown, being very narrow, and we not happy enough to find certain truth in every thing which we have occaſion to conſider; moſt of the propoſitions we think, reaſon, diſcourſe, nay act upon, are ſuch, as we cannot have undoubted knowledge of their truth: yet ſome of them border ſo near upon certainty, that we make no doubt at all about them; but aſſent to them as firmly, and act, according to that aſſent, as reſolutely, as if they were infallibly demonſtrated, and that our knowledge of them was perfect and certain. But there being degrees herein from the very neighbourhood of certainty and demonſtration, quite down to improbability and unlikeneſs, even to the confines of impoſſibility; and alſo degrees of aſſent from full aſſurance and confidence, quite down to conjecture, doubt, and diſtruſt: I ſhall come now, (having, as I think, found out the bounds of human knowledge and certainty) in the next place, to conſider the ſeveral degrees and grounds of probability, and aſſent or faith.

Being that which makes us preſume things to be true before we know them to be ſo.

§. 3. Probability is likelineſs to be true, the very notation of the word ſignifying ſuch a propoſition, for which there be arguments or proofs, to make it paſs or be received for true. The entertainment the mind gives this ſort of propoſitions, is called belief, aſſent, or opinion, which is the admitting or receiving any propoſition for true, upon arguments or proofs that are found to perſuade us to receive it as true, without certain knowledge that it is ſo. And herein lies the difference between probability and certainty, faith and knowledge, that in all the parts of knowledge there is intuition; each immediate idea, each ſtep has its viſible and certain connexion; in belief, not ſo. That which makes me believe is ſomething extraneous to the thing I believe; ſomething not evidently joined on both ſides to, and ſo not manifeſtly ſhowing the agreement or diſagreement of thoſe ideas that are under conſideration.

§. 4.

§. 4. Probability then, being to ſupply the defect of our knowledge, and to guide us where that fails, is always converſant about propoſitions, whereof we have no certainty, but only ſome inducements to receive them for true. The grounds of it are, in ſhort, theſe two following.

The grounds of probability are two; conformity with our own experience, or the teſtimony of others experience.

Firſt, the conformity of any thing with our own knowledge, obſervation, and experience.

Secondly, the teſtimony of others, vouching their obſervation and experience. In the teſtimony of others, is to be conſidered, 1. The number. 2. The integrity. 3. The ſkill of the witneſſes. 4. The deſign of the author, where it is a teſtimony out of a book cited. 5. The conſiſtency of the parts, and circumſtances of the relation. 6. Contrary teſtimonies.

§. 5. Probability wanting that intuitive evidence, which infallibly determines the underſtanding, and produces certain knowledge, the mind, if it would proceed rationally, ought to examine all the grounds of probability, and ſee how they make more or leſs for or againſt any propoſition, before it aſſents to, or diſſents from it; and upon a due balancing the whole, reject, or receive it, with a more or leſs firm aſſent, proportionably to the preponderancy of the greater grounds of probability on one ſide or the other. For example:

In this all the arguments pro and con ought to be examined before we come to a judgment.

If I myſelf ſee a man walk on the ice, it is paſt probability, it is knowledge; but if another tells me he ſaw a man in England, in the midſt of a ſharp winter, walk upon water hardened with cold; this has ſo great conformity with what is uſually obſerved to happen, that I am diſpoſed by the nature of the thing itſelf to aſſent to it, unleſs ſome manifeſt ſuſpicion attend the relation of that matter of fact. But if the ſame thing be told to one born between the tropics, who never ſaw nor heard of any ſuch thing before, there the whole probability relies on teſtimony: and as the relators are more in number, and of more credit, and have no intereſt to

ſpeak contrary to the truth; ſo that matter of fact is like to find more or leſs belief. Though to a man, whoſe experience has always been quite contrary, and who has never heard of any thing like it, the moſt untainted credit of a witneſs will ſcarce be able to find belief. As it happened to a Dutch ambaſſador, who entertaining the king of Siam with the particularities of Holland, which he was inquiſitive after, amongſt other things told him, that the water in his country would ſometimes, in cold weather, be ſo hard, that men walked upon it, and that it would bear an elephant if he were there. To which the king replied, "Hitherto I have "believed the ſtrange things you have told me, becauſe "I look upon you as a ſober fair man, but now I am "ſure you lye."

They being capable of great variety.

§. 6. Upon theſe grounds depends the probability of any propoſition: and as the conformity of our knowledge, as the certainty of obſervations, as the frequency and conſtancy of experience, and the number and credibility of teſtimonies, do more or leſs agree or diſagree with it, ſo is any propoſition in itſelf more or leſs probable. There is another, I confeſs, which, though by itſelf it be no true ground of probability, yet is often made uſe of for one, by which men moſt commonly regulate their aſſent, and upon which they pin their faith more than any thing elſe, and that is the opinion of others: though there cannot be a more dangerous thing to rely on, nor more likely to miſlead one; ſince there is much more falſhood and errour among men, than truth and knowledge. And if the opinions and perſuaſions of others, whom we know and think well of, be a ground of aſſent, men have reaſon to be Heathens in Japan, Mahometans in Turky, Papiſts in Spain, Proteſtants in England, and Lutherans in Sweden. But of this wrong ground of aſſent I ſhall have occaſion to ſpeak more at large in another place.

CHAP.

CHAP. XVI.

Of the Degrees of Aſſent.

§. 1. THE grounds of probability we have laid down in the foregoing chapter; as they are the foundations on which our aſſent is built, ſo are they alſo the meaſure whereby its ſeveral degrees are, or ought to be regulated: only we are to take notice, that whatever grounds of probability there may be, they yet operate no farther on the mind, which ſearches after truth, and endeavours to judge right, than they appear; at leaſt in the firſt judgment or ſearch that the mind makes. I confeſs, in the opinions men have, and firmly ſtick to, in the world, their aſſent is not always from an actual view of the reaſons that at firſt prevailed with them: it being in many caſes almoſt impoſſible, and in moſt very hard, even for thoſe who have very admirable memories, to retain all the proofs, which upon a due examination made them embrace that ſide of the queſtion. It ſuffices that they have once with care and fairneſs ſifted the matter as far as they could; and that they have ſearched into all the particulars, that they could imagine to give any light to the queſtion; and with the beſt of their ſkill caſt up the account upon the whole evidence: and thus having once found on which ſide the probability appeared to them, after as full and exact an inquiry as they can make, they lay up the concluſion in their memories, as a truth they have diſcovered; and for the future they remain ſatisfied with the teſtimony of their memories, that this is the opinion, that by the proofs they have once ſeen of it deſerves ſuch a degree of their aſſent as they afford it.

Our aſſent ought to be regulated by the grounds of probability.

§. 2. This is all that the greateſt part of men are capable of doing, in regulating their opinions and judgments; unleſs a man will exact of them, either to retain diſtinctly in their memories all the proofs concerning

Theſe cannot always be actually in view, and then we muſt

content ourſelves with the remembrance that we once ſaw ground for ſuch a degree of aſſent.

any probable truth, and that too in the ſame order, and regular deduction of conſequences in which they have formerly placed or ſeen them; which ſometimes is enough to fill a large volume on one ſingle queſtion: or elſe they muſt require a man, for every opinion that he embraces, every day to examine the proofs: both which are impoſſible. It is unavoidable therefore that the memory be relied on in the caſe, and that men be perſuaded of ſeveral opinions, whereof the proofs are not actually in their thoughts; nay, which perhaps they are not able actually to recal. Without this the greateſt part of men muſt be either very ſceptics, or change every moment, and yield themſelves up to whoever, having lately ſtudied the queſtion, offers them arguments; which, for want of memory, they are not able preſently to anſwer.

The ill conſequence of this, if our former judgments were not rightly made.

§. 3. I cannot but own, that men's ſticking to their paſt judgment, and adhering firmly to concluſions formerly made, is often the cauſe of great obſtinacy in errour and miſtake. But the fault is not that they rely on their memories for what they have before well judged; but becauſe they judged before they had well examined. May we not find a great number (not to ſay the greateſt part) of men that think they have formed right judgments of ſeveral matters; and that for no other reaſon, but becauſe they never thought otherwiſe? who imagine themſelves to have judged right, only becauſe they never queſtioned, never examined their own opinions? Which is indeed to think they judged right, becauſe they never judged at all: and yet theſe of all men hold their opinions with the greateſt ſtiffneſs; thoſe being generally the moſt fierce and firm in their tenets, who have leaſt examined them. What we once know, we are certain is ſo: and we may be ſecure, that there are no latent proofs undiſcovered, which may overturn our knowledge, or bring it in doubt. But, in matters of probability, it is not in every caſe we can be ſure that we have all the particulars before us, that any way concern the queſtion; and that there

there is no evidence behind, and yet unseen, which may cast the probability on the other side, and outweigh all that at present seems to preponderate with us. Who almost is there that hath the leisure, patience, and means, to collect together all the proofs concerning most of the opinions he has, so as safely to conclude that he hath a clear and full view; and that there is no more to be alledged for his better information? And yet we are forced to determine ourselves on the one side or other. The conduct of our lives, and the management of our great concerns, will not bear delay: for those depend, for the most part, on the determination of our judgment in points wherein we are not capable of certain and demonstrative knowledge, and wherein it is necessary for us to embrace the one side or the other.

The right use of it, is mutual charity and forbearance.

§. 4. Since therefore it is unavoidable to the greatest part of men, if not all, to have several opinions, without certain and indubitable proofs of their truth; and it carries too great an imputation of ignorance, lightness, or folly, for men to quit and renounce their former tenets presently upon the offer of an argument, which they cannot immediately answer, and show the insufficiency of: it would methinks become all men to maintain peace, and the common offices of humanity and friendship, in the diversity of opinions; since we cannot reasonably expect, that any one should readily and obsequiously quit his own opinion, and embrace ours with a blind resignation to an authority, which the understanding of man acknowledges not. For however it may often mistake, it can own no other guide but reason, nor blindly submit to the will and dictates of another. If he, you would bring over to your sentiments, be one that examines before he assents, you must give him leave at his leisure to go over the account again, and, recalling what is out of his mind, examine all the particulars, to see on which side the advantage lies: and if he will not think our arguments of weight enough to engage him a-new in so much pains, it is but what we often do ourselves in the like case; and we should take it amiss if others should prescribe to us what points we

ſhould ſtudy. And if he be one who takes his opinions upon truſt, how can we imagine that he ſhould renounce thoſe tenets which time and cuſtom have ſo ſettled in his mind, that he thinks them ſelf-evident, and of an unqueſtionable certainty; or which he takes to be impreſſions he has received from God himſelf, or from men ſent by him? How can we expect, I ſay, that opinions thus ſettled ſhould be given up to the arguments or authority of a ſtranger, or adverſary; eſpecially if there be any ſuſpicion of intereſt or deſign, as there never fails to be, where men find themſelves ill treated? We ſhould do well to commiſerate our mutual ignorance, and endeavour to remove it in all the gentle and fair ways of information; and not inſtantly treat others ill, as obſtinate and perverſe, becauſe they will not renounce their own, and receive our opinions, or at leaſt thoſe we would force upon them, when it is more than probable, that we are no leſs obſtinate in not embracing ſome of theirs. For where is the man that has inconteſtable evidence of the truth of all that he holds, or of the falſhood of all he condemns; or can ſay, that he has examined to the bottom all his own, or other men's opinions? The neceſſity of believing, without knowledge, nay often upon very ſlight grounds, in this fleeting ſtate of action and blindneſs we are in, ſhould make us more buſy and careful to inform ourſelves, than conſtrain others. At leaſt thoſe, who have not thoroughly examined to the bottom all their own tenets, muſt confeſs they are unfit to preſcribe to others; and are unreaſonable in impoſing that as truth on other men's belief, which they themſelves have not ſearched into, nor weighed the arguments of probability, on which they ſhould receive or reject it. Thoſe who have fairly and truly examined, and are thereby got paſt doubt in all the doctrines they profeſs and govern themſelves by, would have a juſter pretence to require others to follow them: but theſe are ſo few in number, and find ſo little reaſon to be magiſterial in their opinions, that nothing inſolent and imperious is to be expected from them: and there is reaſon to think, that, if men were better inſtructed themſelves, they would be leſs impoſing on others.

§. 5. But to return to the grounds of assent, and the several degrees of it, we are to take notice, that the propositions we receive upon inducements of probability, are of two sorts; either concerning some particular existence, or, as it is usually termed, matter of fact, which falling under observation, is capable of human testimony; or else concerning things, which being beyond the discovery of our senses, are not capable of any such testimony.

Probability is either of matter of fact or speculation.

§. 6. Concerning the first of these, viz. particular matter of fact.

The concurrent experience of all other men with ours produces assurance approaching to knowledge.

First, where any particular thing, consonant to the constant observation of ourselves and others in the like case, comes attested by the concurrent reports of all that mention it, we receive it as easily, and build as firmly upon it, as if it were certain knowledge; and we reason and act thereupon with as little doubt, as if it were perfect demonstration. Thus, if all Englishmen, who have occasion to mention it, should affirm that it froze in England the last winter, or that there were swallows seen there in the summer; I think a man could almost as little doubt of it, as that seven and four are eleven. The first therefore, and highest degree of probability, is, when the general consent of all men, in all ages, as far as it can be known, concurs with a man's constant and never-failing experience in like cases, to confirm the truth of any particular matter of fact attested by fair witnesses: such are all the stated constitutions and properties of bodies, and the regular proceedings of causes and effects in the ordinary course of nature. This we call an argument from the nature of things themselves. For what our own and other men's constant observation has found always to be after the same manner, that we with reason conclude to be the effect of steady and regular causes, though they come not within the reach of our knowledge. Thus, that fire warmed a man, made lead fluid, and changed the colour or consistency in wood or charcoal; that iron sunk in water, and swam in quicksilver: these and the like

like propoſitions about particular facts, being agreeable to our conſtant experience, as often as we have to do with theſe matters; and being generally ſpoke of (when mentioned by others) as things found conſtantly to be ſo, and therefore not ſo much as controverted by any body; we are put paſt doubt, that a relation affirming any ſuch thing to have been, or any predication that it will happen again in the ſame manner, is very true. Theſe probabilities riſe ſo near to certainty, that they govern our thoughts as abſolutely, and influence all our actions as fully, as the moſt evident demonſtration; and in what concerns us, we make little or no difference between them and certain knowledge. Our belief, thus grounded, riſes to aſſurance.

Unqueſtionable teſtimony and experience for the moſt part produce confidence.

§. 7. Secondly, the next degree of probability is, when I find by my own experience, and the agreement of all others that mention it, a thing to be, for the moſt part, ſo; and that the particular inſtance of it is atteſted by many and undoubted witneſſes, v. g. hiſtory giving us ſuch an account of men in all ages; and my own experience, as far as I had an opportunity to obſerve, confirming it, that moſt men prefer their private advantage to the public: if all hiſtorians that write of Tiberius ſay that Tiberius did ſo, it is extremely probable. And in this caſe, our aſſent has a ſufficient foundation to raiſe itſelf to a degree which we may call confidence.

Fair teſtimony, and the nature of the thing indifferent, produce alſo confident belief.

§. 8. Thirdly, in things that happen indifferently, as that a bird ſhould fly this or that way; that it ſhould thunder on a man's right or left hand, &c. when any particular matter of fact is vouched by the concurrent teſtimony of unſuſpected witneſſes, there our aſſent is alſo unavoidable. Thus, that there is ſuch a city in Italy as Rome; that, about one thouſand ſeven hundred years ago, there lived in it a man, called Julius Cæſar; that he was a general, and that he won a battle againſt another, called Pompey: this, though in the nature of the thing there be nothing for nor againſt it, yet being related by hiſtorians of credit,

credit, and contradicted by no one writer, a man cannot avoid believing it, and can as little doubt of it, as he does of the being and actions of his own acquaintance, whereof he himself is a witness.

Experiences and testimonies clashing infinitely vary the degrees of probability.

§. 9. Thus far the matter goes easy enough. Probability upon such grounds carries so much evidence with it, that it naturally determines the judgment, and leaves us as little liberty to believe, or disbelieve, as a demonstration does, whether we will know, or be ignorant. The difficulty is, when testimonies contradict common experience, and the reports of history and witnesses clash with the ordinary course of nature, or with one another; there it is, where diligence, attention, and exactness are required, to form a right judgment, and to proportion the assent to the different evidence and probability of the thing; which rises and falls, according as those two foundations of credibility, viz. common observation in like cases, and particular testimonies in that particular instance, favour or contradict it. These are liable to so great variety of contrary observations, circumstances, reports, different qualifications, tempers, designs, oversights, &c. of the reporters, that it is impossible to reduce to precise rules the various degrees wherein men give their assent. This only may be said in general, that as the arguments and proofs pro and con, upon due examination, nicely weighing every particular circumstance, shall to any one appear, upon the whole matter, in a greater or less degree, to preponderate on either side; so they are fitted to produce in the mind such different entertainment, as we call belief, conjecture, guess, doubt, wavering, distrust, disbelief, &c.

Traditional testimonies, the farther removed, the less their proof.

§. 10. This is what concerns assent in matters wherein testimony is made use of: concerning which, I think, it may not be amiss to take notice of a rule observed in the law of England; which is, that though the attested copy of a record be good proof, yet the copy of a copy ever so well attested, and by ever so credible witnesses, will not be admitted as a proof in

judicature. This is ſo generally approved as reaſonable, and ſuited to the wiſdom and caution to be uſed in our inquiry after material truths, that I never yet heard of any one that blamed it. This practice, if it be allowable in the deciſions of right and wrong, carries this obſervation along with it, viz. that any teſtimony, the farther off it is from the original truth, the leſs force and proof it has. The being and exiſtence of the thing itſelf is what I call the original truth. A credible man vouching his knowledge of it is a good proof: but if another equally credible do witneſs it from his report, the teſtimony is weaker; and a third that atteſts the hear-ſay of an hear-ſay, is yet leſs conſiderable. So that in traditional truths, each remove weakens the force of the proof: and the more hands the tradition has ſucceſſively paſſed through, the leſs ſtrength and evidence does it receive from them. This I thought neceſſary to be taken notice of, becauſe I find amongſt ſome men the quite contrary commonly practiſed, who look on opinions to gain force by growing older; and what a thouſand years ſince would not, to a rational man, contemporary with the firſt voucher, have appeared at all probable, is now urged as certain beyond all queſtion, only becauſe ſeveral have ſince, from him, ſaid it one after another. Upon this ground, propoſitions, evidently falſe or doubtful enough in their firſt beginning, come by an inverted rule of probability to paſs for authentic truths; and thoſe which found or deſerved little credit from the mouths of their firſt authors, are thought to grow venerable by age, and are urged as undeniable.

Yet hiſtory is of great uſe.

§. 11. I would not be thought here to leſſen the credit and uſe of hiſtory: it is all the light we have in many caſes, and we receive from it a great part of the uſeful truths we have, with a convincing evidence. I think nothing more valuable than the records of antiquity: I wiſh we had more of them, and more uncorrupted. But this truth itſelf forces me to ſay, that no probability can ariſe higher than its firſt original. What has no other evidence than the ſingle teſtimony of one only witneſs, muſt ſtand or fall by his only teſtimony, whether good, bad,

bad, or indifferent; and though cited afterwards by hundreds of others, one after another, is ſo far from receiving any ſtrength thereby, that it is only the weaker. Paſſion, intereſt, inadvertency, miſtake of his meaning, and a thouſand odd reaſons, or capricio's, men's minds are acted by (impoſſible to be diſcovered) may make one man quote another man's words or meaning wrong. He that has but ever ſo little examined the citations of writers, cannot doubt how little credit the quotations deſerve, where the originals are wanting; and conſequently how much leſs quotations of quotations can be relied on. This is certain, that what in one age was affirmed upon ſlight grounds, can never after come to be more valid in future ages, by being often repeated. But the farther ſtill it is from the original, the leſs valid it is, and has always leſs force in the mouth or writing of him that laſt made uſe of it, than in his from whom he received it.

In things which ſenſe cannot diſcover, analogy is the great rule of probability.

§. 12. The probabilities we have hitherto mentioned are only ſuch as concern matter of fact, and ſuch things as are capable of obſervation and teſtimony. There remains that other ſort, concerning which men entertain opinions with variety of aſſent, though the things be ſuch, that, falling not under the reach of our ſenſes, they are not capable of teſtimony. Such are, 1. The exiſtence, nature, and operations of finite immaterial beings without us; as ſpirits, angels, devils, &c. or the exiſtence of material beings; which either for their ſmallneſs in themſelves, or remoteneſs from us, our ſenſes cannot take notice of; as whether there be any plants, animals, and intelligent inhabitants in the planets, and other manſions of the vaſt univerſe. 2. Concerning the manner of operation in moſt parts of the works of nature: wherein though we ſee the ſenſible effects, yet their cauſes are unknown, and we perceive not the ways and manner how they are produced. We ſee animals are generated, nouriſhed, and move; the loadſtone draws iron; and the parts of a candle, ſucceſſively melting, turn into flame, and give us both light and heat. Theſe and the like effects we

ſee

ſee and know: but the cauſes that operate, and the manner they are produced in, we can only gueſs and probably conjecture. For theſe and the like, coming not within the ſcrutiny of human ſenſes, cannot be examined by them, or be atteſted by any body; and therefore can appear more or leſs probable, only as they more or leſs agree to truths that are eſtabliſhed in our minds, and as they hold proportion to other parts of our knowledge and obſervation. Analogy in theſe matters is the only help we have, and it is from that alone we draw all our grounds of probability. Thus obſerving that the bare rubbing of two bodies violently one upon another produces heat, and very often fire itſelf, we have reaſon to think, that what we call heat and fire conſiſts in a violent agitation of the imperceptible minute parts of the burning matter: obſerving likewiſe that the different refractions of pellucid bodies produce in our eyes the different appearances of ſeveral colours; and alſo that the different ranging and laying the ſuperficial parts of ſeveral bodies, as of velvet, watered ſilk, &c. does the like, we think it probable that the colour and ſhining of bodies is in them nothing but the different arrangement and refraction of their minute and inſenſible parts. Thus finding in all parts of the creation, that fall under human obſervation, that there is a gradual connexion of one with another, without any great or diſcernible gaps between, in all that great variety of things we ſee in the world, which are ſo cloſely linked together, that in the ſeveral ranks of beings, it is not eaſy to diſcover the bounds betwixt them; we have reaſon to be perſuaded, that by ſuch gentle ſteps things aſcend upwards in degrees of perfection. It is a hard matter to ſay where ſenſible and rational begin, and where inſenſible and irrational end: and who is there quick-ſighted enough to determine preciſely, which is the loweſt ſpecies of living things, and which the firſt of thoſe which have no life? Things, as far as we can obſerve, leſſen and augment, as the quantity does in a regular cone; where though there be a manifeſt odds betwixt the bigneſs of the diameter at a remote diſtance, yet the difference between the upper and under, where they

they touch one another, is hardly diſcernible. The difference is exceeding great between ſome men, and ſome animals; but if we will compare the underſtanding and abilities of ſome men and ſome brutes, we ſhall find ſo little difference, that it will be hard to ſay, that that of the man is either clearer or larger. Obſerving, I ſay, ſuch gradual and gentle deſcents downwards in thoſe parts of the creation that are beneath man, the rule of analogy may make it probable, that it is ſo alſo in things above us and our obſervation; and that there are ſeveral ranks of intelligent beings, excelling us in ſeveral degrees of perfection, aſcending upwards towards the infinite perfection of the creator, by gentle ſteps and differences, that are every one at no great diſtance from the next to it. This ſort of probability, which is the beſt conduct of rational experiments, and the riſe of hypotheſis, has alſo its uſe and influence; and a wary reaſoning from analogy leads us often into the diſcovery of truths and uſeful productions, which would otherwiſe lie concealed.

One caſe where contrary experience leſſens not the teſtimony.

§. 13. Though the common experience and the ordinary courſe of things have juſtly a mighty influence on the minds of men, to make them give or refuſe credit to any thing propoſed to their belief; yet there is one caſe, wherein the ſtrangeneſs of the fact leſſens not the aſſent to a fair teſtimony given of it. For where ſuch ſupernatural events are ſuitable to ends aimed at by him, who has the power to change the courſe of nature, there, under ſuch circumſtances, they may be the fitter to procure belief, by how much the more they are beyond, or contrary to ordinary obſervation. This is the proper caſe of miracles, which well atteſted do not only find credit themſelves, but give it alſo to other truths, which need ſuch confirmation.

The bare teſtimony of revelation is the higheſt certainty.

§. 14. Beſides thoſe we have hitherto mentioned, there is one ſort of propoſitions that challenge the higheſt degree of our aſſent upon bare teſtimony, whether the thing propoſed agree or diſagree with common experience, and the ordinary courſe of things, or

no.

no. The reaſon whereof is, becauſe the teſtimony is of ſuch an one, as cannot deceive, nor be deceived, and that is of God himſelf. This carries with it an aſſurance beyond doubt, evidence beyond exception. This is called by a peculiar name, revelation; and our aſſent to it, faith: which as abſolutely determines our minds, and as perfectly excludes all wavering, as our knowledge itſelf; and we may as well doubt of our own being, as we can, whether any revelation from God be true. So that faith is a ſettled and ſure principle of aſſent and aſſurance, and leaves no manner of room for doubt or heſitation. Only we muſt be ſure, that it be a divine revelation, and that we underſtand it right: elſe we ſhall expoſe ourſelves to all the extravagancy of enthuſiaſm, and all the errour of wrong principles, if we have faith and aſſurance in what is not divine revelation. And therefore in thoſe caſes, our aſſent can be rationally no higher than the evidence of its being a revelation, and that this is the meaning of the expreſſions it is delivered in. If the evidence of its being a revelation, or that this is its true ſenſe, be only on probable proofs; our aſſent can reach no higher than an aſſurance or diffidence, ariſing from the more or leſs apparent probability of the proofs. But of faith, and the precedency it ought to have before other arguments of perſuaſion, I ſhall ſpeak more hereafter, where I treat of it, as it is ordinarily placed, in contradiſtinction to reaſon; though in truth it be nothing elſe but an aſſent founded on the higheſt reaſon.

CHAP. XVII.

Of Reaſon.

Various ſignifications of the word reaſon.

§. 1. THE word reaſon in the Engliſh language has different ſignifications: ſometimes it is taken for true and clear principles; ſometimes for clear and fair deductions from thoſe principles; and ſometimes for

for the cauſe, and particularly the final cauſe. But the conſideration I ſhall have of it here, is in a ſignification different from all theſe; and that is, as it ſtands for a faculty in man, that faculty whereby man is ſuppoſed to be diſtinguiſhed from beaſts, and wherein it is evident he much ſurpaſſes them.

Where in reaſoning conſiſts.

§. 2. If general knowledge, as has been ſhown, conſiſts in a perception of the agreement or diſagreement of our own ideas; and the knowledge of the exiſtence of all things without us (except only of a God, whoſe exiſtence every man may certainly know and demonſtrate to himſelf from his own exiſtence) be had only by our ſenſes: what room is there for the exerciſe of any other faculty, but outward ſenſe and inward perception? What need is there of reaſon? Very much; both for the enlargement of our knowledge, and regulating our aſſent: for it hath to do both in knowledge and opinion, and is neceſſary and aſſiſting to all our other intellectual faculties, and indeed contains two of them, viz. ſagacity and illation. By the one, it finds out; and by the other, it ſo orders the intermediate ideas, as to diſcover what connexion there is in each link of the chain, whereby the extremes are held together; and thereby, as it were, to draw into view the truth ſought for, which is that which we call illation or inference, and conſiſts in nothing but the perception of the connexion there is between the ideas, in each ſtep of the deduction, whereby the mind comes to ſee either the certain agreement or diſagreement of any two ideas, as in demonſtration, in which it arrives at knowledge; or their probable connexion, on which it gives or withholds its aſſent, as in opinion. Senſe and intuition reach but a very little way. The greateſt part of our knowledge depends upon deductions and intermediate ideas: and in thoſe caſes, where we are fain to ſubſtitute aſſent inſtead of knowledge, and take propoſitions for true, without being certain they are ſo, we have need to find out, examine, and compare the grounds of their probability. In both theſe caſes, the faculty which finds out the means, and rightly applies them to diſcover certainty in the one, and probability in the

other, is that which we call reaſon. For as reaſon perceives the neceſſary and indubitable connexion of all the ideas or proofs one to another, in each ſtep of any demonſtration that produces knowledge; ſo it likewiſe perceives the probable connexion of all the ideas or proofs one to another, in every ſtep of a diſcourſe, to which it will think aſſent due. This is the loweſt degree of that which can be truly called reaſon. For where the mind does not perceive this probable connexion, where it does not diſcern whether there be any ſuch connexion or no; there men's opinions are not the product of judgment, or the conſequence of reaſon, but the effects of chance and hazard, of a mind floating at all adventures, without choice and without direction.

Its four parts.

§. 3. So that we may in reaſon conſider theſe four degrees; the firſt and higheſt is the diſcovering and finding out of truths; the ſecond, the regular and methodical diſpoſition of them, and laying them in a clear and fit order, to make their connexion and force be plainly and eaſily perceived; the third is the perceiving their connexion; and the fourth, a making a right concluſion. Theſe ſeveral degrees may be obſerved in any mathematical demonſtration; it being one thing to perceive the connexion of each part, as the demonſtration is made by another; another, to perceive the dependence of the concluſion on all the parts; a third, to make out a demonſtration clearly and neatly one's ſelf; and ſomething different from all theſe, to have firſt found out theſe intermediate ideas or proofs by which it is made.

Syllogiſm not the great inſtrument of reaſon.

§. 4. There is one thing more, which I ſhall deſire to be conſidered concerning reaſon; and that is, whether ſyllogiſm, as is generally thought, be the proper inſtrument of it, and the uſefulleſt way of exerciſing this faculty. The cauſes I have to doubt are theſe,

Firſt, becauſe ſyllogiſm ſerves our reaſon but in one only of the forementioned parts of it; and that is, to ſhow the connexion of the proofs in any one inſtance, and no more: but in this it is of no great uſe, ſince the mind

mind can conceive ſuch connexion where it really is, as eaſily, nay perhaps better, without it.

If we will obſerve the actings of our own minds, we ſhall find that we reaſon beſt and cleareſt, when we only obſerve the connexion of the proof, without reducing our thoughts to any rule of ſyllogiſm. And therefore we may take notice, that there are many men that reaſon exceeding clear and rightly, who know not how to make a ſyllogiſm. He that will look into many parts of Aſia and America, will find men reaſon there perhaps as acutely as himſelf, who yet never heard of a ſyllogiſm, nor can reduce any one argument to thoſe forms: and I believe ſcarce any one makes ſyllogiſms in reaſoning within himſelf. Indeed ſyllogiſm is made uſe of on occaſion, to diſcover a fallacy hid in a rhetorical flouriſh, or cunningly wrapt up in a ſmooth period; and, ſtripping an abſurdity of the cover of wit and good language, ſhow it in its naked deformity. But the weakneſs or fallacy of ſuch a looſe diſcourſe it ſhows, by the artificial form it is put into, only to thoſe who have thoroughly ſtudied mode and figure, and have ſo examined the many ways that three propoſitions may be put together, as to know which of them does certainly conclude right, and which not, and upon what grounds it is that they do ſo. All who have ſo far conſidered ſyllogiſm, as to ſee the reaſon why in three propoſitions laid together in one form, the concluſion will be certainly right, but in another, not certainly ſo; I grant are certain of the concluſion they draw from the premiſes in the allowed modes and figures. But they who have not ſo far looked into thoſe forms, are not ſure by virtue of ſyllogiſm, that the concluſion certainly follows from the premiſes; they only take it to be ſo by an implicit faith in their teachers, and a confidence in thoſe forms of argumentation; but this is ſtill but believing, not being certain. Now if, of all mankind, thoſe who can make ſyllogiſms are extremely few in compariſon of thoſe who cannot; and if, of thoſe few who have been taught logic, there is but a very ſmall number, who do any more than believe that ſyllogiſms in the allowed modes and figures do conclude right, without knowing cer-

tainly that they do ſo; if ſyllogiſms muſt be taken for the only proper inſtrument of reaſon and means of knowledge; it will follow, that before Ariſtotle there was not one man that did or could know any thing by reaſon; and that ſince the invention of ſyllogiſms, there is not one of ten thouſand that doth.

But God has not been ſo ſparing to men to make them barely two-legged creatures, and left it to Ariſtotle to make them rational, i. e. thoſe few of them that he could get ſo to examine the grounds of ſyllogiſms, as to ſee, that in above threeſcore ways, that three propoſitions may be laid together, there are but about fourteen, wherein one may be ſure that the concluſion is right; and upon what grounds it is, that in theſe few the concluſion is certain, and in the other not. God has been more bountiful to mankind than ſo. He has given them a mind that can reaſon, without being inſtructed in methods of ſyllogizing: the underſtanding is not taught to reaſon by theſe rules; it has a native faculty to perceive the coherence or incoherence of its ideas, and can range them right, without any ſuch perplexing repetitions. I ſay not this any way to leſſen Ariſtotle, whom I look on as one of the greateſt men amongſt the antients; whoſe large views, acuteneſs, and penetration of thought, and ſtrength of judgment, few have equalled: and who in this very invention of forms of argumentation, wherein the concluſion may be ſhown to be rightly inferred, did great ſervice againſt thoſe who were not aſhamed to deny any thing. And I readily own, that all right reaſoning may be reduced to his forms of ſyllogiſm. But yet I think, without any diminution to him, I may truly ſay, that they are not the only, nor the beſt way of reaſoning, for the leading of thoſe into truth who are willing to find it, and deſire to make the beſt uſe they may of their reaſon, for the attainment of knowledge. And he himſelf, it is plain, found out ſome forms to be concluſive, and others not, not by the forms themſelves, but by the original way of knowledge, i. e. by the viſible agreement of ideas. Tell a country gentlewoman that the wind is ſouth-weſt, and the weather louring, and like to rain, and ſhe will eaſily underſtand it is not ſafe

ſafe for her to go abroad thin clad, in ſuch a day, after a fever: ſhe clearly ſees the probable connexion of all theſe, viz. ſouth-weſt wind, and clouds, rain, wetting, taking cold, relapſe, and danger of death, without tying them together in thoſe artificial and cumberſome fetters of ſeveral ſyllogiſms, that clog and hinder the mind, which proceeds from one part to another quicker and clearer without them; and the probability which ſhe eaſily perceives in things thus in their native ſtate would be quite loſt, if this argument were managed learnedly, and propoſed in mode and figure. For it very often confounds the connexion: and, I think, every one will perceive in mathematical demonſtrations, that the knowledge gained thereby comes ſhorteſt and cleareſt without ſyllogiſms.

Inference is looked on as the great act of the rational faculty, and ſo it is when it is rightly made; but the mind, either very deſirous to enlarge its knowledge, or very apt to favour the ſentiments it has once imbibed, is very forward to make inferences, and therefore often makes too much haſte, before it perceives the connexion of the ideas that muſt hold the extremes together.

To infer is nothing but, by virtue of one propoſition laid down as true, to draw in another as true, i. e. to ſee or ſuppoſe ſuch a connexion of the two ideas of the inferred propoſition, v. g. Let this be the propoſition laid down, "men ſhall be puniſhed in another world," and from thence be inferred this other, "then men can determine themſelves." The queſtion now is to know whether the mind has made this inference right or no; if it has made it by finding out the intermediate ideas, and taking a view of the connexion of them, placed in a due order, it has proceeded rationally, and made a right inference. If it has done it without ſuch a view, it has not ſo much made an inference that will hold, or an inference of right reaſon, as ſhown a willingneſs to have it be, or be taken for ſuch. But in neither caſe is it ſyllogiſm that diſcovered thoſe ideas, or ſhowed the connexion of them, for they muſt be both found out, and the connexion every where perceived, before they can rationally be made uſe of in ſyllogiſm: unleſs it can be

ſaid, that any idea, without conſidering what connexion it hath with the two other, whoſe agreement ſhould be ſhown by it, will do well enough in a ſyllogiſm, and may be taken at a venture for the medius terminus, to prove any concluſion. But this nobody will ſay, becauſe it is by virtue of the perceived agreement of the intermediate idea with the extremes, that the extremes are concluded to agree; and therefore each intermediate idea muſt be ſuch as in the whole chain hath a viſible connexion with thoſe two it has been placed between, or elſe thereby the concluſion cannot be inferred or drawn in: for wherever any link of the chain is looſe, and without connexion, there the whole ſtrength of it is loſt, and it hath no force to infer or draw in any thing. In the inſtance above-mentioned, what is it ſhows the force of the inference, and conſequently the reaſonableneſs of it, but a view of the connexion of all the intermediate ideas that draw in the concluſion, or propoſition inferred? v. g. men ſhall be puniſhed——— God the puniſher———juſt puniſhment———the puniſhed guilty———could have done otherwiſe——— freedom———ſelf-determination: by which chain of ideas thus viſibly linked together in train, i. e. each intermediate idea agreeing on each ſide with thoſe two it is immediately placed between, the ideas of men and ſelf-determination appear to be connected, i. e. this propoſition, men can determine themſelves, is drawn in, or inferred from this, that they ſhall be puniſhed in the other world. For here the mind ſeeing the connexion there is between the idea of men's puniſhment in the other world and the idea of God puniſhing; between God puniſhing and the juſtice of the puniſhment; between juſtice of the puniſhment and guilt; between guilt and a power to do otherwiſe; between a power to do otherwiſe and freedom; and between freedom and ſelf-determination; ſees the connexion between men and ſelf-determination.

Now I aſk whether the connexion of the extremes be not more clearly ſeen in this ſimple and natural diſpoſition, than in the perplexed repetitions, and jumble of five or ſix ſyllogiſms. I muſt beg pardon for calling it

jumble, till ſomebody ſhall put theſe ideas into ſo many ſyllogiſms, and then ſay, that they are leſs jumbled, and their connexion more viſible, when they are tranſpoſed and repeated, and ſpun out to a greater length in artificial forms, than in that ſhort and natural plain order they are laid down in here, wherein every one may ſee it; and wherein they muſt be ſeen before they can be put into a train of ſyllogiſms. For the natural order of the connecting ideas, muſt direct the order of the ſyllogiſms, and a man muſt ſee the connexion of each intermediate idea with thoſe that it connects, before he can with reaſon make uſe of it in a ſyllogiſm. And when all thoſe ſyllogiſms are made, neither thoſe that are, nor thoſe that are not logicians will ſee the force of the argumentation, i. e. the connexion of the extremes, one jot the better. [For thoſe that are not men of art, not knowing the true forms of ſyllogiſm, nor the reaſons of them, cannot know whether they are made in right and concluſive modes and figures or no, and ſo are not at all helped by the forms they are put into; though by them the natural order, wherein the mind could judge of their reſpective connexion, being diſturbed, renders the illation much more uncertain than without them.] And as for the logicians themſelves, they ſee the connexion of each intermediate idea with thoſe it ſtands between (on which the force of the inference depends) as well before as after the ſyllogiſm is made, or elſe they do not ſee it at all. For a ſyllogiſm neither ſhows nor ſtrengthens the connexion of any two ideas immediately put together, but only by the connexion ſeen in them ſhows what connexion the extremes have one with another. But what connexion the intermediate has with either of the extremes in that ſyllogiſm, that no ſyllogiſm does or can ſhow. That the mind only doth or can perceive as they ſtand there in that juxta-poſition only by its own view, to which the ſyllogiſtical form it happens to be in gives no help or light at all; it only ſhows that if the intermediate idea agrees with thoſe it is on both ſides immediately applied to; then thoſe two remote ones, or as they are called, extremes, do certainly agree, and therefore the immediate connexion of each idea to that

which it is applied to on each ſide, on which the force of the reaſoning depends, is as well ſeen before as after the ſyllogiſm is made, or elſe he that makes the ſyllogiſm could never ſee it at all. This, as has been already obſerved, is ſeen only by the eye, or the perceptive faculty of the mind, taking a view of them laid together, in a juxta-poſition; which view of any two it has equally, whenever they are laid together in any propoſition, whether that propoſition be placed as a major, or a minor, in a ſyllogiſm or no.

Of what uſe then are ſyllogiſms? I anſwer, their chief and main uſe is in the ſchools, where men are allowed without ſhame to deny the agreement of ideas that do manifeſtly agree; or out of the ſchools, to thoſe who from thence have learned without ſhame to deny the connexion of ideas, which even to themſelves is viſible. But to an ingenuous ſearcher after truth, who has no other aim but to find it, there is no need of any ſuch form to force the allowing of the inference: the truth and reaſonableneſs of it is better ſeen in ranging of the ideas in a ſimple and plain order: and hence it is, that men, in their own inquiries after truth, never uſe ſyllogiſms to convince themſelves, [or in teaching others to inſtruct willing learners.] Becauſe, before they can put them into a ſyllogiſm, they muſt ſee the connexion that is between the intermediate idea and the two other ideas it is ſet between and applied to, to ſhow their agreement; and when they ſee that, they ſee whether the inference be good or no, and ſo ſyllogiſm comes too late to ſettle it. For to make uſe again of the former inſtance; I aſk whether the mind, conſidering the idea of juſtice, placed as an intermediate idea between the puniſhment of men and the guilt of the puniſhed, (and, till it does ſo conſider it, the mind cannot make uſe of it as a medius terminus) does not as plainly ſee the force and ſtrength of the inference, as when it is formed into a ſyllogiſm. To ſhow it in a very plain and eaſy example; let animal be the intermediate idea or medius terminus that the mind makes uſe of to ſhow the connexion of homo and vivens: I aſk, whether the mind does not more readily and plainly ſee that connexion in the ſimple

and

and proper poſition of the connecting idea in the middle; thus,

Homo————Animal————Vivens,

Than in this perplexed one,

Animal——Vivens——Homo——Animal:

Which is the poſition theſe ideas have in a ſyllogiſm, to ſhow the connexion between homo and vivens by the intervention of animal.

Indeed ſyllogiſm is thought to be of neceſſary uſe, even to the lovers of truth, to ſhow them the fallacies that are often concealed in florid, witty, or involved diſcourſes. But that this is a miſtake will appear, if we conſider, that the reaſon why ſometimes men, who ſincerely aim at truth, are impoſed upon by ſuch looſe, and as they are called rhetorical diſcourſes, is, that their fancies being ſtruck with ſome lively metaphorical repreſentations, they neglect to obſerve, or do not eaſily perceive what are the true ideas, upon which the inference depends. Now to ſhow ſuch men the weakneſs of ſuch an argumentation, there needs no more but to ſtrip it of the ſuperfluous ideas, which, blended and confounded with thoſe on which the inference depends, ſeem to ſhow a connexion where there is none; or at leaſt do hinder the diſcovery of the want of it; and then to lay the naked ideas, on which the force of the argumentation depends, in their due order, in which poſition the mind, taking a view of them, ſees what connexion they have, and ſo is able to judge of the inference without any need of a ſyllogiſm at all.

I grant that mode and figure is commonly made uſe of in ſuch caſes, as if the detection of the incoherence of ſuch looſe diſcourſes were wholly owing to the ſyllogiſtical form; and ſo I myſelf formerly thought, till upon a ſtricter examination I now find, that laying the intermediate ideas naked in their due order, ſhows the incoherence of the argumentation better than ſyllogiſm; not only as ſubjecting each link of the chain to the immediate view of the mind in its proper place, whereby its connexion is beſt obſerved; but alſo becauſe ſyllo-

giſm ſhows the incoherence only to thoſe (who are not one of ten thouſand) who perfectly underſtand mode and figure, and the reaſon upon which thoſe forms are eſtabliſhed: whereas a due and orderly placing of the ideas upon which the inference is made, makes every one, whether logician or not logician, who underſtands the terms, and hath the faculty to perceive the agreement or diſagreement of ſuch ideas (without which, in or out of ſyllogiſm, he cannot perceive the ſtrength or weakneſs, coherence or incoherence of the diſcourſe) ſee the want of connexion in the argumentation, and the abſurdity of the inference.

And thus I have known a man unſkilful in ſyllogiſm, who at firſt hearing could perceive the weakneſs and inconcluſiveneſs of a long artificial and plauſible diſcourſe, wherewith others better ſkilled in ſyllogiſm have been miſled. And I believe there are few of my readers who do not know ſuch. And indeed if it were not ſo, the debates of moſt princes councils, and the buſineſs of aſſemblies would be in danger to be miſmanaged, ſince thoſe who are relied upon, and have uſually a great ſtroke in them, are not always ſuch, who have the good luck to be perfectly knowing in the forms of ſyllogiſm, or expert in mode and figure. And if ſyllogiſm were the only, or ſo much as the ſureſt way to detect the fallacies of artificial diſcourſes; I do not think that all mankind, even princes in matters that concern their crowns and dignities, are ſo much in love with falſhood and miſtake, that they would every where have neglected to bring ſyllogiſm into the debates of moment; or thought it ridiculous ſo much as to offer them in affairs of conſequence: a plain evidence to me, that men of parts and penetration, who were not idly to diſpute at their eaſe, but were to act according to the reſult of their debates, and often pay for their miſtakes with their heads or fortunes, found thoſe ſcholaſtic forms were of little uſe to diſcover truth or fallacy, whilſt both the one and the other might be ſhown, and better ſhown without them, to thoſe who would not refuſe to ſee what was viſibly ſhown them.

Secondly,

Secondly, another reaſon that makes me doubt whether ſyllogiſm be the only proper inſtrument of reaſon in the diſcovery of truth, is, that of whatever uſe mode and figure is pretended to be in the laying open of fallacy (which has been above conſidered) thoſe ſcholaſtic forms of diſcourſe are not leſs liable to fallacies than the plainer ways of argumentation; and for this I appeal to common obſervation, which has always found theſe artificial methods of reaſoning more adapted to catch and entangle the mind, than to inſtruct and inform the underſtanding. And hence it is that men, even when they are baffled and ſilenced in this ſcholaſtic way, are ſeldom or never convinced, and ſo brought over to the conquering ſide: they perhaps acknowledge their adverſary to be the more ſkilful diſputant; but reſt nevertheleſs perſuaded of the truth on their ſide; and go away, worſted as they are, with the ſame opinion they brought with them, which they could not do, if this way of argumentation carried light and conviction with it, and made men ſee where the truth lay. And therefore ſyllogiſm has been thought more proper for the attaining victory in diſpute, than for the diſcovery or confirmation of truth in fair inquiries. And if it be certain, that fallacies can be couched in ſyllogiſm, as it cannot be denied; it muſt be ſomething elſe, and not ſyllogiſm, that muſt diſcover them.

I have had experience how ready ſome men are, when all the uſe which they have been wont to aſcribe to any thing is not allowed, to cry out, that I am for laying it wholly aſide. But, to prevent ſuch unjuſt and groundleſs imputations, I tell them, that I am not for taking away any helps to the underſtanding, in the attainment of knowledge. And if men ſkilled in, and uſed to ſyllogiſms, find them aſſiſting to their reaſon in the diſcovery of truth, I think they ought to make uſe of them. All that I aim at is, that they ſhould not aſcribe more to theſe forms than belongs to them; and think that men have no uſe, or not ſo full an uſe of their reaſoning faculty without them. Some eyes want ſpectacles to ſee things clearly and diſtinctly: but let not thoſe that uſe them therefore ſay, nobody can ſee clearly without them:

them: thoſe who do ſo will be thought in favour of art (which perhaps they are beholden to) a little too much to depreſs and diſcredit nature. Reaſon, by its own penetration where it is ſtrong and exerciſed, uſually ſees quicker and clearer without ſyllogiſm. If uſe of thoſe ſpectacles has ſo dimmed its ſight, that it cannot without them ſee conſequences or inconſequences in argumentation, I am not ſo unreaſonable as to be againſt the uſing them. Every one knows what beſt fits his own ſight. But let him not thence conclude all in the dark, who uſe not juſt the ſame helps that he finds a need of.

Helps little in demonſtration, leſs in probability.

§. 5. But however it be in knowledge, I think I may truly ſay, it is of far leſs, or no uſe at all in probabilities. For, the aſſent there being to be determined by the preponderancy, after due weighing of all the proofs, with all circumſtances on both ſides, nothing is ſo unfit to aſſiſt the mind in that, as ſyllogiſm; which running away with one aſſumed probability, or one topical argument, purſues that till it has led the mind quite out of ſight of the thing under conſideration; and forcing it upon ſome remote difficulty, holds it faſt there, intangled perhaps, and as it were manacled in the chain of ſyllogiſms, without allowing it the liberty, much leſs affording it the helps, requiſite to ſhow on which ſide, all things conſidered, is the greater probability.

Serves not to increaſe our knowledge, but fence with it.

§. 6. But let it help us (as perhaps may be ſaid) in convincing men of their errours and miſtakes: (and yet I would fain ſee the man that was forced out of his opinion by dint of ſyllogiſm) yet ſtill it fails our reaſon in that part, which, if not its higheſt perfection, is yet certainly its hardeſt taſk, and that which we moſt need its help in; and that is the finding out of proofs, and making new diſcoveries. The rules of ſyllogiſm ſerve not to furniſh the mind with thoſe intermediate ideas that may ſhow the connexion of remote ones. This way of reaſoning diſcovers no new proofs, but is the art of marſhalling and ranging the old ones we have already. The forty-ſeventh propoſition of the firſt book of Euclid is very true; but the diſcovery of it, I think, not owing

to

to any rules of common logic. A man knows firſt, and then he is able to prove ſyllogiſtically. So that ſyllogiſm comes after knowledge, and then a man has little or no need of it. But it is chiefly by the finding out thoſe ideas that ſhow the connexion of diſtant ones, that our ſtock of knowledge is increaſed, and that uſeful arts and ſciences are advanced. Syllogiſm at beſt is but the art of fencing with the little knowledge we have, without making any addition to it. And if a man ſhould employ his reaſon all this way, he will not do much otherwiſe than he, who having got ſome iron out of the bowels of the earth, ſhould have it beaten up all into ſwords, and put it into his ſervants hands to fence with, and bang one another. Had the king of Spain employed the hands of his people, and his Spaniſh iron ſo, he had brought to light but little of that treaſure that lay ſo long hid in the entrails of America. And I am apt to think, that he who ſhall employ all the force of his reaſon only in brandiſhing of ſyllogiſms, will diſcover very little of that maſs of knowledge, which lies yet concealed in the ſecret receſſes of nature; and which, I am apt to think, native ruſtic reaſon (as it formerly has done) is likelier to open a way to, and add to the common ſtock of mankind, rather than any ſcholaſtic proceeding by the ſtrict rule of mode and figure.

Other helps ſhould be ſought.

§. 7. I doubt not nevertheleſs, but there are ways to be found out to aſſiſt our reaſon in this moſt uſeful part; and this the judicious Hooker encourages me to ſay, who in his Eccl. Pol. l. 1. §. 6, ſpeaks thus: "If there might be added "the right helps of true art and learning (which helps, "I muſt plainly confeſs, this age of the world carrying "the name of a learned age, doth neither much know, "nor generally regard) there would undoubtedly be "almoſt as much difference in maturity of judgment "between men therewith inured, and that which men "now are, as between men that are now, and innocents." I do not pretend to have found, or diſcovered here any of thoſe right helps of art, this great man of deep thought mentions; but this is plain, that ſyllogiſm, and the logic now in uſe, which were as well known

known in his days, can be none of thoſe he means. It is ſufficient for me, if by a diſcourſe, perhaps ſomething out of the way, I am ſure as to me wholly new and unborrowed, I ſhall have given occaſion to others to caſt about for new diſcoveries, and to ſeek in their own thoughts, for thoſe right helps of art, which will ſcarce be found, I fear, by thoſe who ſervilely confine themſelves to the rules and dictates of others. For beaten tracks lead this ſort of cattle (as an obſerving Roman calls them) whoſe thoughts reach only to imitation, "non quo eundum eſt, ſed quo itur." But I can be bold to ſay, that this age is adorned with ſome men of that ſtrength of judgment, and largeneſs of comprehenſion, that if they would employ their thoughts on this ſubject, could open new and undiſcovered ways to the advancement of knowledge.

We reaſon about particulars.

§. 8. Having here had an occaſion to ſpeak of ſyllogiſm in general, and the uſe of it in reaſoning, and the improvement of our knowledge, it is fit, before I leave this ſubject, to take notice of one manifeſt miſtake in the rules of ſyllogiſm, viz. that no ſyllogiſtical reaſoning can be right and concluſive, but what has, at leaſt, one general propoſition in it. As if we could not reaſon, and have knowledge about particulars: whereas, in truth, the matter rightly conſidered, the immediate object of all our reaſoning and knowledge, is nothing but particulars. Every man's reaſoning and knowledge is only about the ideas exiſting in his own mind, which are truly, every one of them, particular exiſtences; and our knowledge and reaſon about other things, is only as they correſpond with thoſe of our particular ideas. So that the perception of the agreement or diſagreement of our particular ideas, is the whole and utmoſt of all our knowledge. Univerſality is but accidental to it, and conſiſts only in this, that the particular ideas, about which it is, are ſuch, as more than one particular thing can correſpond with, and be repreſented by. But the perception of the agreement or diſagreement of any two ideas, conſequently our own knowledge, is equally clear and certain, whether either, or both, or neither of thoſe ideas

ideas be capable of repreſenting more real beings than one, or no. One thing more I crave leave to offer about ſyllogiſm, before I leave it, viz. may one not upon juſt ground inquire whether the form ſyllogiſm now has, is that which in reaſon it ought to have? For the medius terminus being to join the extremes, i. e. the intermediate idea by its intervention, to ſhow the agreement or diſagreement of the two in queſtion; would not the poſition of the medius terminus be more natural, and ſhow the agreement or diſagreement of the extremes clearer and better, if it were placed in the middle between them? Which might be eaſily done by tranſpoſing the propoſitions, and making the medius terminus the predicate of the firſt, and the ſubject of the ſecond. As thus,

" Omnis homo eſt animal,
" Omne animal eſt vivens,
" Ergo omnis homo eſt vivens."

" Omne corpus eſt entenſum & ſolidum,
" Nullum extenſum & ſolidum eſt pura extenſio,
" Ergo corpus non eſt pura extenſio."

I need not trouble my reader with inſtances in ſyllogiſms, whoſe concluſions are particular. The ſame reaſon holds for the ſame form in them, as well as in the general.

1. Reaſon fails us for want of ideas.

§. 9. Reaſon, though it penetrates into the depths of the ſea and earth, elevates our thoughts as high as the ſtars, and leads us through the vaſt ſpaces and large rooms of this mighty fabric, yet it comes far ſhort of the real extent of even corporeal being; and there are many inſtances wherein it fails us: as,

Firſt, it perfectly fails us, where our ideas fail. It neither does, nor can extend itſelf farther than they do. And therefore wherever we have no ideas, our reaſoning ſtops, and we are at an end of our reckoning: and if at any time we reaſon about words, which do not ſtand for

any

any ideas, it is only about thoſe ſounds, and nothing elſe.

2. Becauſe of obſcure and imperfect ideas.

§. 10. Secondly, our reaſon is often puzzled, and at a loſs, becauſe of the obſcurity, confuſion, or imperfection of the ideas it is employed about; and there we are involved in difficulties and contradictions. Thus not having any perfect idea of the leaſt extenſion of matter, nor of infinity, we are at a loſs about the diviſibility of matter; but having perfect, clear, and diſtinct ideas of number, our reaſon meets with none of thoſe inextricable difficulties in numbers, nor finds itſelf involved in any contradictions about them. Thus, we having but imperfect ideas of the operations of our minds, and of the beginning of motion, or thought, how the mind produces either of them in us, and much imperfecter yet of the operation of God; run into great difficulties about free created agents, which reaſon cannot well extricate itſelf out of.

3. For want of intermediate ideas.

§. 11. Thirdly, our reaſon is often at a ſtand, becauſe it perceives not thoſe ideas, which could ſerve to ſhow the certain or probable agreement or diſagreement of any other two ideas: and in this ſome men's faculties far outgo others. Till algebra, that great inſtrument and inſtance of human ſagacity, was diſcovered, men, with amazement, looked on ſeveral of the demonſtrations of antient mathematicians, and could ſcarce forbear to think the finding ſeveral of thoſe proofs to be ſomething more than human.

4. Becauſe of wrong principles.

§. 12. Fourthly, the mind, by proceeding upon falſe principles, is often engaged in abſurdities and difficulties, brought into ſtraits and contradictions, without knowing how to free itſelf; and in that caſe it is in vain to implore the help of reaſon, unleſs it be to diſcover the falſhood and reject the influence of thoſe wrong principles. Reaſon is ſo far from clearing the difficulties which the building upon falſe foundations brings a man into, that if he will purſue it, it entangles him the more, and engages him deeper in perplexities.

§. 13.

§. 13. Fifthly, as obscure and imperfect ideas often involve our reason, so, upon the same ground, do dubious words, and uncertain signs, often in discourses and arguings, when not warily attended to, puzzle men's reason, and bring them to a non-plus. But these two latter are our fault, and not the fault of reason. But yet the consequences of them are nevertheless obvious; and the perplexities or errours they fill men's minds with, are every where observable. 5. Because of doubtful terms.

§. 14. Some of the ideas that are in the mind, are so there, that they can be by themselves immediately compared one with another: and in these the mind is able to perceive, that they agree or disagree as clearly, as that it has them. Thus the mind perceives, that an arch of a circle is less than the whole circle, as clearly as it does the idea of a circle: and this therefore, as has been said, I call intuitive knowledge; which is certain, beyond all doubt, and needs no probation, nor can have any; this being the highest of all human certainty. In this consists the evidence of all those maxims, which nobody has any doubt about, but every man (does not, as is said, only assent to, but) knows to be true, as soon as ever they are proposed to his understanding. In the discovery of, and assent to these truths, there is no use of the discursive faculty, no need of reasoning, but they are known by a superior and higher degree of evidence. And such, if I may guess at things unknown, I am apt to think, that angels have now, and the spirits of just men made perfect, shall have, in a future state, of thousands of things, which now either wholly escape our apprehensions, or which, our short-sighted reason having got some faint glimpse of, we, in the dark, grope after. Our highest degree of knowledge is intuitive, without reasoning.

§. 15. But though we have, here and there, a little of this clear light, some sparks of bright knowledge; yet the greatest part of our ideas are such, that we cannot discern their agreement or disagreement by an immediate com- The next is demonstration by reasoning.

paring them. And in all theſe we have need of reaſoning, and muſt, by diſcourſe and inference, make our diſcoveries. Now of theſe there are two ſorts, which I ſhall take the liberty to mention here again.

Firſt, thoſe whoſe agreement or diſagreement, though it cannot be ſeen by an immediate putting them together, yet may be examined by the intervention of other ideas, which can be compared with them. In this caſe when the agreement or diſagreement of the intermediate idea, on both ſides with thoſe which we would compare, is plainly diſcerned, there it amounts to a demonſtration, whereby knowledge is produced; which though it be certain, yet it is not ſo eaſy, nor altogether ſo clear as intuitive knowledge. Becauſe in that there is barely one ſimple intuition, wherein there is no room for any the leaſt miſtake or doubt; the truth is ſeen all perfectly at once. In demonſtration, it is true, there is intuition too, but not altogether at once; for there muſt be a remembrance of the intuition of the agreement of the medium, or intermediate idea, with that we compared it with before, when we compare it with the other; and where there be many mediums, there the danger of the miſtake is the greater. For each agreement or diſagreement of the ideas muſt be obſerved and ſeen in each ſtep of the whole train, and retained in the memory, juſt as it is; and the mind muſt be ſure that no part of what is neceſſary to make up the demonſtration is omitted or overlooked. This makes ſome demonſtrations long and perplexed, and too hard for thoſe who have not ſtrength of parts diſtinctly to perceive, and exactly carry ſo many particulars orderly in their heads. And even thoſe, who are able to maſter ſuch intricate ſpeculations, are fain ſometimes to go over them again, and there is need of more than one review before they can arrive at certainty. But yet where the mind clearly retains the intuition it had of the agreement of any idea with another, and that with a third, and that with a fourth, &c. there the agreement of the firſt and the fourth is a demonſtration, and produces certain knowledge, which may be called rational knowledge, as the other is intuitive.

2 §. 16.

§. 16. Secondly, there are other ideas, whoſe agreement or diſagreement can no otherwiſe be judged of, but by the intervention of others, which have not a certain agreement with the extremes, but an uſual or likely one: and in theſe it is that the judgment is properly exerciſed, which is the acquieſcing of the mind, that any ideas do agree, by comparing them with ſuch probable mediums. This, though it never amounts to knowledge, no not to that which is the loweſt degree of it: yet ſometimes the intermediate ideas tie the extremes ſo firmly together, and the probability is ſo clear and ſtrong, that aſſent as neceſſarily follows it, as knowledge does demonſtration. The great excellency and uſe of the judgment is to obſerve right, and take a true eſtimate of the force and weight of each probability; and then, caſting them up all right together, chooſe that ſide which has the overbalance.

To ſupply the narrowneſs of this, we have nothing but judgment upon probable reaſoning.

§. 17. Intuitive knowledge is the perception of the certain agreement or diſagreement of two ideas immediately compared together.

Intuition, demonſtration, judgment.

Rational knowledge is the perception of the certain agreement or diſagreement of any two ideas, by the intervention of one or more other ideas.

Judgment is the thinking or taking two ideas to agree or diſagree, by the intervention of one or more ideas, whoſe certain agreement or diſagreement with them it does not perceive, but hath obſerved to be frequent and uſual.

§. 18. Though the deducing one propoſition from another, or making inferences in words, be a great part of reaſon, and that which it is uſually employed about; yet the principal act of ratiocination is the finding the agreement or diſagreement of two ideas one with another, by the intervention of a third. As a man, by a yard, finds two houſes to be of the ſame length, which could not be brought together to meaſure their equality by juxta-poſition. Words have their conſequences, as

Conſequences of words, and conſequences of ideas.

the signs of such ideas: and things agree or disagree, as really they are; but we observe it only by our ideas.

Four sorts of arguments.

§. 19. Before we quit this subject, it may be worth our while a little to reflect on four sorts of arguments, that men, in their reasonings with others, do ordinarily make use of, to prevail on their assent; or at least so to awe them, as to silence their opposition.

1. Ad verecundiam.

First, the first is to allege the opinions of men, whose parts, learning, eminency, power, or some other cause has gained a name, and settled their reputation in the common esteem with some kind of authority. When men are established in any kind of dignity, it is thought a breach of modesty for others to derogate any way from it, and question the authority of men, who are in possession of it. This is apt to be censured, as carrying with it too much of pride, when a man does not readily yield to the determination of approved authors, which is wont to be received with respect and submission by others: and it is looked upon as insolence for a man to set up, and adhere to his own opinion, against the current stream of antiquity; or to put it in the balance against that of some learned doctor, or otherwise approved writer. Whoever backs his tenets with such authorities, thinks he ought thereby to carry the cause, and is ready to style it impudence in any one who shall stand out against them. This, I think, may be called argumentum ad verecundiam.

2. Ad ignorantiam.

§. 20. Secondly, another way that men ordinarily use to drive others, and force them to submit their judgments, and receive the opinion in debate, is to require the adversary to admit what they allege as a proof, or to assign a better. And this I call argumentum ad ignorantiam.

3. Ad hominem.

§. 21. Thirdly, a third way is to press a man with consequences drawn from his own principles, or concessions. This is already known under the name of argumentum ad hominem.

4. Ad judicium.

§. 22. Fourthly, the fourth is the using of proofs drawn from any of the foundations of

of knowledge or probability. This I call argumentum ad judicium. This alone, of all the four, brings true inſtruction with it, and advances us in our way to knowledge. For, 1. It argues not another man's opinion to be right, becauſe I out of reſpect, or any other conſideration but that of conviction, will not contradict him. 2. It proves not another man to be in the right way, nor that I ought to take the ſame with him, becauſe I know not a better. 3. Nor does it follow that another man is in the right way, becauſe he has ſhown me that I am in the wrong. I may be modeſt, and therefore not oppoſe another man's perſuaſion: I may be ignorant, and not be able to produce a better: I may be in an errour, and another may ſhow me that I am ſo. This may diſpoſe me, perhaps, for the reception of truth, but helps me not to it; that muſt come from proofs and arguments, and light ariſing from the nature of things themſelves, and not from my ſhame-facedneſs, ignorance, or errour.

Above, contrary, and according to reaſon.

§. 23. By what has been before ſaid of reaſon, we may be able to make ſome gueſs at the diſtinction of things, into thoſe that are according to, above, and contrary to reaſon. 1. According to reaſon are ſuch propoſitions, whoſe truth we can diſcover by examining and tracing thoſe ideas we have from ſenſation and reflection; and by natural deduction find to be true or probable. 2. Above reaſon are ſuch propoſitions, whoſe truth or probability we cannot by reaſon derive from thoſe principles. 3. Contrary to reaſon are ſuch propoſitions, as are inconſiſtent with, or irreconcileable to, our clear and diſtinct ideas. Thus the exiſtence of one God is according to reaſon; the exiſtence of more than one God, contrary to reaſon; the reſurrection of the dead, above reaſon. Farther, as above reaſon may be taken in a double ſenſe, viz. either as ſignifying above probability, or above certainty; ſo in that large ſenſe alſo, contrary to reaſon, is, I ſuppoſe, ſometimes taken.

Reaſon and faith not oppoſite.

§. 24. There is another uſe of the word reaſon, wherein it is oppoſed to faith; which though it be in itſelf a very improper

way of ſpeaking, yet common uſe has ſo authorized it, that it would be folly either to oppoſe or hope to remedy it: only I think it may not be amiſs to take notice, that however faith be oppoſed to reaſon, faith is nothing but a firm aſſent of the mind: which if it be regulated, as is our duty, cannot be afforded to any thing but upon good reaſon; and ſo cannot be oppoſite to it. He that believes, without having any reaſon for believing, may be in love with his own fancies; but neither ſeeks truth as he ought, nor pays the obedience due to his Maker, who would have him uſe thoſe diſcerning faculties he has given him, to keep him out of miſtake and errour. He that does not this to the beſt of his power, however he ſometimes lights on truth, is in the right but by chance; and I know not whether the luckineſs of the accident will excuſe the irregularity of his proceeding. This at leaſt is certain, that he muſt be accountable for whatever miſtakes he runs into: whereas he that makes uſe of the light and faculties God has given him, and ſeeks ſincerely to diſcover truth by thoſe helps and abilities he has, may have this ſatisfaction in doing his duty as a rational creature, that, though he ſhould miſs truth, he will not miſs the reward of it. For he governs his aſſent right, and places it as he ſhould, who, in any caſe or matter whatſoever, believes or diſbelieves, according as reaſon directs him. He that doth otherwiſe tranſgreſſes againſt his own light, and miſuſes thoſe faculties which were given him to no other end, but to ſearch and follow the clearer evidence and greater probability. But, ſince reaſon and faith are by ſome men oppoſed, we will ſo conſider them in the following chapter.

CHAP. XVIII.

Of Faith and Reaſon, and their diſtinct Provinces.

Neceſſary to know their boundaries.

§. 1. IT has been above ſhown, 1. That we are of neceſſity ignorant, and want knowledge of all ſorts, where we want ideas.

ideas. 2. That we are ignorant, and want rational knowledge, where we want proofs. 3. That we want certain knowledge and certainty, as far as we want clear and determined ſpecific ideas. 4. That we want probability to direct our aſſent in matters where we have neither knowledge of our own, nor teſtimony of other men, to bottom our reaſon upon.

From theſe things thus premiſed, I think we may come to lay down the meaſures and boundaries between faith and reaſon; the want whereof may poſſibly have been the cauſe, if not of great diſorders, yet at leaſt of great diſputes, and perhaps miſtakes in the world. For till it be reſolved, how far we are to be guided by reaſon, and how far by faith, we ſhall in vain diſpute, and endeavour to convince one another in matters of religion.

Faith and reaſon what, as contradiſtinguiſhed.

§. 2. I find every ſect, as far as reaſon will help them, make uſe of it gladly: and where it fails them, they cry out, it is matter of faith, and above reaſon. And I do not ſee how they can argue, with any one, or ever convince a gainſayer who makes uſe of the ſame plea, without ſetting down ſtrict boundaries between faith and reaſon; which ought to be the firſt point eſtabliſhed in all queſtions, where faith has any thing to do.

Reaſon therefore here, as contradiſtinguiſhed to faith, I take to be the diſcovery of the certainty or probability of ſuch propoſitions or truths, which the mind arrives at by deduction made from ſuch ideas, which it has got by the uſe of its natural faculties; viz. by ſenſation or reflection.

Faith, on the other ſide, is the aſſent to any propoſition, not thus made out by the deductions of reaſon; but upon the credit of the propoſer, as coming from God, in ſome extraordinary way of communication. This way of diſcovering truths to men we call revelation.

No new ſimple idea can be conveyed by traditional revelation.

§. 3. Firſt then I ſay, that no man inſpired by God can by any revelation communicate to others any new ſimple ideas, which they had not before from ſenſation or reflection. For whatſoever impreſſions he

himſelf may have from the immediate hand of God, this revelation, if it be of new ſimple ideas, cannot be conveyed to another, either by words, or any other ſigns. Becauſe words, by their immediate operation on us, cauſe no other ideas, but of their natural ſounds: and it is by the cuſtom of uſing them for ſigns, that they excite and revive in our minds latent ideas; but yet only ſuch ideas as were there before. For words ſeen or heard, recal to our thoughts thoſe ideas only, which to us they have been wont to be ſigns of; but cannot introduce any perfectly new, and formerly unknown ſimple ideas. The ſame holds in all other ſigns, which cannot ſignify to us things, of which we have before never had any idea at all.

Thus whatever things were diſcovered to St. Paul, when he was rapt up into the third heaven, whatever new ideas his mind there received, all the deſcription he can make to others of that place, is only this, that there are ſuch things, "as eye hath not ſeen, nor ear "heard, nor hath it entered into the heart of man to "conceive." And ſuppoſing God ſhould diſcover to any one, ſupernaturally, a ſpecies of creatures inhabiting, for example, Jupiter or Saturn, (for that it is poſſible there may be ſuch, nobody can deny) which had ſix ſenſes; and imprint on his mind the ideas conveyed to theirs by that ſixth ſenſe; he could no more, by words, produce in the minds of other men thoſe ideas, imprinted by that ſixth ſenſe, than one of us could convey the idea of any colour by the ſounds of words into a man, who, having the other four ſenſes perfect, had always totally wanted the fifth of ſeeing. For our ſimple ideas then, which are the foundation and ſole matter of all our notions and knowledge, we muſt depend wholly on our reaſon, I mean our natural faculties; and can by no means receive them, or any of them, from traditional revelation; I ſay, traditional revelation, in diſtinction to original revelation. By the one, I mean that firſt impreſſion, which is made immediately by God, on the mind of any man, to which we cannot ſet any bounds; and by the other, thoſe impreſſions delivered over to

others in words, and the ordinary ways of conveying our conceptions one to another.

Traditional revelation may make us know propoſitions knowable alſo by reaſon, but not with the ſame certainty that reaſon doth.

§. 4. Secondly, I ſay, that the ſame truths may be diſcovered, and conveyed down from revelation, which are diſcoverable to us by reaſon, and by thoſe ideas we naturally may have. So God might, by revelation, diſcover the truth of any propoſition in Euclid; as well as men, by the natural uſe of their faculties, come to make the diſcovery themſelves. In all things of this kind, there is little need or uſe of revelation, God having furniſhed us with natural and ſurer means to arrive at the knowledge of them. For whatſoever truth we come to the clear diſcovery of, from the knowledge and contemplation of our own ideas, will always be certainer to us, than thoſe which are conveyed to us by traditional revelation. For the knowledge we have, that this revelation came at firſt from God, can never be ſo ſure, as the knowledge we have from the clear and diſtinct perception of the agreement or diſagreement of our own ideas; v. g. if it were revealed ſome ages ſince, that the three angles of a triangle were equal to two right ones, I might aſſent to the truth of that propoſition, upon the credit of the tradition, that it was revealed; but that would never amount to ſo great a certainty, as the knowledge of it, upon the comparing and meaſuring my own ideas of two right angles, and the three angles of a triangle. The like holds in matter of fact, knowable by our ſenſes; v. g. the hiſtory of the deluge is conveyed to us by writings, which had their original from revelation: and yet nobody, I think, will ſay he has as certain and clear a knowledge of the flood, as Noah that ſaw it; or that he himſelf would have had, had he then been alive and ſeen it. For he has no greater aſſurance than that of his ſenſes, that it is writ in the book ſuppoſed writ by Moſes inſpired: but he has not ſo great an aſſurance that Moſes writ that book, as if he had ſeen Moſes write it. So that the aſſurance of its being a revelation is leſs ſtill than the aſſurance of his ſenſes.

§. 5.

Revelation cannot be admitted againſt the clear evidence of reaſon.

§. 5. In propoſitions then, whoſe certainty is built upon the clear perception of the agreement or diſagreement of our ideas, attained either by immediate intuition, as in ſelf-evident propoſitions, or by evident deductions of reaſon in demonſtrations, we need not the aſſiſtance of revelation, as neceſſary to gain our aſſent, and introduce them into our minds. Becauſe the natural ways of knowledge could ſettle them there, or had done it already; which is the greateſt aſſurance we can poſſibly have of any thing, unleſs where God immediately reveals it to us: and there too our aſſurance can be no greater, than our knowledge is, that it is a revelation from God. But yet nothing, I think, can, under that title, ſhake or over-rule plain knowledge; or rationally prevail with any man to admit it for true, in a direct contradiction to the clear evidence of his own underſtanding. For ſince no evidence of our faculties, by which we receive ſuch revelations, can exceed, if equal, the certainty of our intuitive knowledge, we can never receive for a truth any thing that is directly contrary to our clear and diſtinct knowledge: v. g. the ideas of one body, and one place, do ſo clearly agree, and the mind has ſo evident a perception of their agreement, that we can never aſſent to a propoſition, that affirms the ſame body to be in two diſtant places at once, however it ſhould pretend to the authority of a divine revelation: ſince the evidence, firſt, that we deceive not ourſelves, in aſcribing it to God; ſecondly, that we underſtand it right; can never be ſo great, as the evidence of our own intuitive knowledge, whereby we diſcern it impoſſible for the ſame body to be in two places at once. And therefore no propoſition can be received for divine revelation, or obtain the aſſent due to all ſuch, if it be contradictory to our clear intuitive knowledge. Becauſe this would be to ſubvert the principles and foundations of all knowledge, evidence, and aſſent whatſoever: and there would be left no difference between truth and falſhood, no meaſures of credible and incredible in the world, if doubtful propoſitions ſhall take place before ſelf-evident; and what we certainly know

know give way to what we may poſſibly be miſtaken in. In propoſitions therefore contrary to the clear perception of the agreement or diſagreement of any of our ideas, it will be in vain to urge them as matters of faith. They cannot move our aſſent, under that or any other title whatſoever. For faith can never convince us of any thing that contradicts our knowledge. Becauſe though faith be founded on the teſtimony of God (who cannot lye) revealing any propoſition to us; yet we cannot have an aſſurance of the truth of its being a divine revelation, greater than our own knowledge: ſince the whole ſtrength of the certainty depends upon our knowledge that God revealed it, which in this caſe, where the propoſition ſuppoſed revealed contradicts our knowledge or reaſon, will always have this objection hanging to it, viz. that we cannot tell how to conceive that to come from God, the bountiful Author of our being, which, if received for true, muſt overturn all the principles and foundations of knowledge he has given us; render all our faculties uſeleſs; wholly deſtroy the moſt excellent part of his workmanſhip, our underſtandings; and put a man in a condition, wherein he will have leſs light, leſs conduct than the beaſt that periſheth. For if the mind of man can never have a clearer (and perhaps not ſo clear) evidence of any thing to be a divine revelation, as it has of the principles of its own reaſon, it can never have a ground to quit the clear evidence of its reaſon, to give a place to a propoſition, whoſe revelation has not a greater evidence than thoſe principles have.

Traditional revelation much leſs.

§. 6. Thus far a man has uſe of reaſon, and ought to hearken to it, even in immediate and original revelation, where it is ſuppoſed to be made to himſelf: but to all thoſe who pretend not to immediate revelation, but are required to pay obedience, and to receive the truths revealed to others, which by the tradition of writings, or word of mouth, are conveyed down to them; reaſon has a great deal more to do, and is that only which can induce us to receive them. For matter of faith being only divine revelation, and nothing elſe; faith, as we uſe the word,

(called

(called commonly divine faith) has to do with no propoſitions, but thoſe which are ſuppoſed to be divinely revealed. So that I do not ſee how thoſe, who make revelation alone the ſole object of faith, can ſay, that it is a matter of faith, and not of reaſon, to believe that ſuch or ſuch a propoſition, to be found in ſuch or ſuch a book, is of divine inſpiration; unleſs it be revealed, that that propoſition, or all in that book, was communicated by divine inſpiration. Without ſuch a revelation, the believing, or not believing that propoſition or book to be of divine authority, can never be matter of faith, but matter of reaſon; and ſuch as I muſt come to an aſſent to, only by the uſe of my reaſon, which can never require or enable me to believe that which is contrary to itſelf: it being impoſſible for reaſon ever to procure any aſſent to that, which to itſelf appears unreaſonable.

In all things therefore, where we have clear evidence from our ideas, and thoſe principles of knowledge I have above-mentioned, reaſon is the proper judge; and revelation, though it may in conſenting with it confirm its dictates, yet cannot in ſuch caſes invalidate its decrees: nor can we be obliged, where we have the clear and evident ſentence of reaſon, to quit it for the contrary opinion, under a pretence that it is matter of faith; which can have no authority againſt the plain and clear dictates of reaſon.

Things above reaſon,

§. 7. But, thirdly, there being many things, wherein we have very imperfect notions, or none at all; and other things, of whoſe paſt, preſent, or future exiſtence, by the natural uſe of our faculties, we can have no knowledge at all; theſe, as being beyond the diſcovery of our natural faculties, and above reaſon, are, when revealed, the proper matter of faith. Thus, that part of the angels rebelled againſt God, and thereby loſt their firſt happy ſtate; and that the dead ſhall riſe, and live again: theſe, and the like, being beyond the diſcovery of reaſon, are purely matters of faith; with which reaſon has directly nothing to do.

§. 8.

§. 8. But ſince God in giving us the light of reaſon has not thereby tied up his own hands from affording us, when he thinks fit, the light of revelation in any of thoſe matters, wherein our natural faculties are able to give a probable determination; revelation, where God has been pleaſed to give it, muſt carry it againſt the probable conjectures of reaſon. Becauſe the mind not being certain of the truth of that it does not evidently know, but only yielding to the probability that appears in it, is bound to give up its aſſent to ſuch a teſtimony; which, it is ſatisfied, comes from one who cannot err, and will not deceive. But yet it ſtill belongs to reaſon to judge of the truth of its being a revelation, and of the ſignification of the words wherein it is delivered. Indeed, if any thing ſhall be thought revelation, which is contrary to the plain principles of reaſon, and the evident knowledge the mind has of its own clear and diſtinct ideas; there reaſon muſt be hearkened to, as to a matter within its province: ſince a man can never have ſo certain a knowledge, that a propoſition which contradicts the clear principles and evidence of his own knowledge, was divinely revealed, or that he underſtands the words rightly wherein it is delivered; as he has, that the contrary is true: and ſo is bound to conſider and judge of it as a matter of reaſon, and not ſwallow it, without examination, as a matter of faith.

Or not contrary to reaſon, if revealed, are matter of faith.

§. 9. Firſt, whatever propoſition is revealed, of whoſe truth our mind, by its natural faculties and notions, cannot judge; that is purely matter of faith, and above reaſon.

Revelation in matters where reaſon cannot judge, or but probably, ought to be hearkened to.

Secondly, all propoſitions, whereof the mind, by the uſe of its natural faculties, can come to determine and judge from naturally acquired ideas, are matter of reaſon; with this difference ſtill, that in thoſe concerning which it has but an uncertain evidence, and ſo is perſuaded of their truth only upon probable grounds, which ſtill admit a poſſibility of the contrary to be true, without doing violence to the

the certain evidence of its own knowledge, and overturning the principles of its own reaſon; in ſuch probable propoſitions, I ſay, an evident revelation ought to determine our aſſent even againſt probability. For where the principles of reaſon have not evidenced a propoſition to be certainly true or falſe, there clear revelation, as another principle of truth, and ground of aſſent, may determine; and ſo it may be matter of faith, and be alſo above reaſon. Becauſe reaſon, in that particular matter, being able to reach no higher than probability, faith gave the determination, where reaſon came ſhort; and revelation diſcovered on which ſide the truth lay.

In matters where reaſon can afford certain knowledge, that is to be hearkened to.

§. 10. Thus far the dominion of faith reaches, and that without any violence or hindrance to reaſon; which is not injured or diſturbed, but aſſiſted and improved, by new diſcoveries of truth coming from the eternal fountain of all knowledge. Whatever God hath revealed is certainly true; no doubt can be made of it. This is the proper object of faith: but whether it be a divine revelation or no, reaſon muſt judge; which can never permit the mind to reject a greater evidence to embrace what is leſs evident, nor allow it to entertain probability in oppoſition to knowledge and certainty. There can be no evidence, that any traditional revelation is of divine original, in the words we receive it, and in the ſenſe we underſtand it, ſo clear and ſo certain, as that of the principles of reaſon: and therefore nothing that is contrary to, and inconſiſtent with, the clear and ſelf-evident dictates of reaſon, has a right to be urged or aſſented to as a matter of faith, wherein reaſon hath nothing to do. Whatſoever is divine revelation ought to over-rule all our opinions, prejudices, and intereſt, and hath a right to be received with full aſſent. Such a ſubmiſſion as this, of our reaſon to faith, takes not away the land-marks of knowledge: this ſhakes not the foundations of reaſon, but leaves us that uſe of our faculties, for which they were given us.

If the boundaries be not

§. 11. If the provinces of faith and reaſon are not kept diſtinct by theſe boundaries,

ries, there will, in matters of religion, be no room for reaſon at all; and thoſe extravagant opinions and ceremonies that are to be found in the ſeveral religions of the world, will not deſerve to be blamed. For, to this crying up of faith, in oppoſition to reaſon, we may, I think, in good meaſure aſcribe thoſe abſurdities that fill almoſt all the religions which poſſeſs and divide mankind. For men having been principled with an opinion, that they muſt not conſult reaſon in the things of religion, however apparently contradictory to common ſenſe, and the very principles of all their knowledge; have let looſe their fancies and natural ſuperſtition; and have been by them led into ſo ſtrange opinions, and extravagant practices in religion, that a conſiderate man cannot but ſtand amazed at their follies, and judge them ſo far from being acceptable to the great and wiſe God, that he cannot avoid thinking them ridiculous, and offenſive to a ſober good man. So that in effect religion, which ſhould moſt diſtinguiſh us from beaſts, and ought moſt peculiarly to elevate us, as rational creatures, above brutes, is that wherein men often appear moſt irrational and more ſenſeleſs than beaſts themſelves. "Credo, quia impoſſibile eſt;" I believe, becauſe it is impoſſible, might in a good man paſs for a ſally of zeal; but would prove a very ill rule for men to chooſe their opinions or religion by.

ſet between faith and reaſon, no enthuſiaſm or extravagancy in religion can be contradicted.

CHAP. XIX.

Of Enthuſiaſm.

§. 1. HE that would ſeriouſly ſet upon the ſearch of truth, ought in the firſt place to prepare his mind with a love of it. For he that loves it not, will not take much pains to get it, nor be much concerned when he miſſes it. There is nobody in the commonwealth of learning, who

Love of truth neceſſary.

who does not profeſs himſelf a lover of truth; and there is not a rational creature that would not take it amiſs to be thought otherwiſe of. And yet for all this, one may truly ſay, that there are very few lovers of truth for truth-ſake, even amongſt thoſe who perſuade themſelves that they are ſo. How a man may know whether he be ſo in earneſt, is worth inquiry: and I think there is one unerring mark of it, viz. the not entertaining any propoſition with greater aſſurance, than the proofs it is built upon will warrant. Whoever goes beyond this meaſure of aſſent, it is plain, receives not truth in the love of it; loves not truth for truth-ſake, but for ſome other bye-end. For the evidence that any propoſition is true (except ſuch as are ſelf-evident) lying only in the proofs a man has of it, whatſoever degrees of aſſent he affords it beyond the degrees of that evidence, it is plain that all the ſurpluſage of aſſurance is owing to ſome other affection, and not to the love of truth: it being as impoſſible, that the love of truth ſhould carry my aſſent above the evidence there is to me that it is true, as that the love of truth ſhould make me aſſent to any propoſition for the ſake of that evidence, which it has not, that it is true; which is in effect to love it as a truth, becauſe it is poſſible or probable that it may not be true. In any truth that gets not poſſeſſion of our minds by the irreſiſtible light of ſelf-evidence, or by the force of demonſtration, the arguments that gain it aſſent are the vouchers and gage of its probability to us; and we can receive it for no other, than ſuch as they deliver it to our underſtandings. Whatſoever credit or authority we give to any propoſition, more than it receives from the principles and proofs it ſupports itſelf upon, is owing to our inclinations that way, and is ſo far a derogation from the love of truth as ſuch: which, as it can receive no evidence from our paſſions or intereſts, ſo it ſhould receive no tincture from them.

A forwardneſs to dictate, from whence.

§. 2. The aſſuming an authority of dictating to others, and a forwardneſs to preſcribe to their opinions, is a conſtant concomitant of this biaſs and corruption of our judgments. For how almoſt can it be otherwiſe, but that

that he ſhould be ready to impoſe on another's belief, who has already impoſed on his own? Who can reaſonably expect arguments and conviction from him, in dealing with others, whoſe underſtanding is not accuſtomed to them in his dealing with himſelf? Who does violence to his own faculties, tyrannizes over his own mind, and uſurps the prerogative that belongs to truth alone, which is to command aſſent by only its own authority, i. e. by and in proportion to that evidence which it carries with it.

Force of enthuſiaſm.

§. 3. Upon this occaſion I ſhall take the liberty to conſider a third ground of aſſent, which with ſome men has the ſame authority, and is as confidently relied on as either faith or reaſon; I mean enthuſiaſm: which, laying by reaſon, would ſet up revelation without it. Whereby in effect it takes away both reaſon and revelation, and ſubſtitutes in the room of it the ungrounded fancies of a man's own brain, and aſſumes them for a foundation both of opinion and conduct.

Reaſon and revelation.

§. 4. Reaſon is natural revelation, whereby the eternal father of light, and fountain of all knowledge, communicates to mankind that portion of truth which he has laid within the reach of their natural faculties: revelation is natural reaſon enlarged by a new ſet of diſcoveries communicated by God immediately, which reaſon vouches the truth of, by the teſtimony and proofs it gives, that they come from God. So that he that takes away reaſon, to make way for revelation, puts out the light of both, and does much-what the ſame, as if he would perſuade a man to put out his eyes, the better to receive the remote light of an inviſible ſtar by a teleſcope.

Riſe of enthuſiaſm.

§. 5. Immediate revelation being a much eaſier way for men to eſtabliſh their opinions, and regulate their conduct, than the tedious and not always ſucceſsful labour of ſtrict reaſoning, it is no wonder that ſome have been very apt to pretend to revelation, and to perſuade themſelves that they are under the peculiar guidance of heaven in their actions and opinions, eſpecially in thoſe of them which

they cannot account for by the ordinary methods of knowledge, and principles of reaſon. Hence we ſee that in all ages, men, in whom melancholy has mixed with devotion, or whoſe conceit of themſelves has raiſed them into an opinion of a greater familarity with God, and a nearer admittance to his favour than is afforded to others, have often flattered themſelves with a perſuaſion of an immediate intercourſe with the Deity, and frequent communications from the Divine Spirit. God, I own, cannot be denied to be able to enlighten the underſtanding by a ray darted into the mind immediately from the fountain of light; this they underſtand he has promiſed to do, and who then has ſo good a title to expect it as thoſe who are his peculiar people, choſen by him, and depending on him?

Enthuſiaſm. §. 6. Their minds being thus prepared, whatever groundleſs opinion comes to ſettle itſelf ſtrongly upon their fancies, is an illumination from the ſpirit of God, and preſently of divine authority: and whatſoever odd action they find in themſelves a ſtrong inclination to do, that impulſe is concluded to be a call or direction from heaven, and muſt be obeyed; it is a commiſſion from above, and they cannot err in executing it.

§. 7. This I take to be properly enthuſiaſm, which, though founded neither on reaſon nor divine revelation, but riſing from the conceits of a warmed or over-weening brain, works yet, where it once gets footing, more powerfully on the perſuaſions and actions of men, than either of thoſe two, or both together: men being moſt forwardly obedient to the impulſes they receive from themſelves; and the whole man is ſure to act more vigorouſly, where the whole man is carried by a natural motion. For ſtrong conceit, like a new principle, carries all eaſily with it, when got above common ſenſe, and freed from all reſtraint of reaſon, and check of reflection, it is heightened into a divine authority, in concurrence with our own temper and inclination.

Enthuſiaſm miſtaken for ſeeing and feeling. §. 8. Though the odd opinions and extravagant actions enthuſiaſm has run men into, were enough to warn them againſt this wrong principle, ſo apt to miſguide them

them both in their belief and conduct; yet the love of ſomething extraordinary, the eaſe and glory it is to be inſpired, and be above the common and natural ways of knowledge, ſo flatters many men's lazineſs, ignorance, and vanity, that when once they are got into this way of immediate revelation, of illumination without ſearch, and of certainty without proof, and without examination; it is a hard matter to get them out of it. Reaſon is loſt upon them, they are above it: they ſee the light infuſed into their underſtandings, and cannot be miſtaken; it is clear and viſible there, like the light of bright ſunſhine; ſhows itſelf, and needs no other proof but its own evidence: they feel the hand of God moving them within, and the impulſes of the ſpirit, and cannot be miſtaken in what they feel. Thus they ſupport themſelves, and are ſure reaſon hath nothing to do with what they ſee and feel in themſelves: what they have a ſenſible experience of admits no doubt, needs no probation. Would he not be ridiculous, who ſhould require to have it proved to him that the light ſhines, and that he ſees it? It is its own proof, and can have no other. When the ſpirit brings light into our minds, it diſpels darkneſs. We ſee it, as we do that of the ſun at noon, and need not the twilight of reaſon to ſhow it us. This light from heaven is ſtrong, clear, and pure, carries its own demonſtration with it; and we may as naturally take a glow-worm to aſſiſt us to diſcover the ſun, as to examine the celeſtial ray by our dim candle, reaſon.

Enthuſiaſm how to be diſcovered.

§. 9. This is the way of talking of theſe men: they are ſure, becauſe they are ſure: and their perſuaſions are right, becauſe they are ſtrong in them. For, when what they ſay is ſtripped of the metaphor of ſeeing and feeling, this is all it amounts to: and yet theſe ſimilies ſo impoſe on them, that they ſerve them for certainty in themſelves, and demonſtration to others.

§. 10. But to examine a little ſoberly this internal light, and this feeling on which they build ſo much. Theſe men have, they ſay, clear light, and they ſee; they have awakened ſenſe, and they feel: this cannot,

they are ſure, be diſputed them. For when a man ſays he ſees or feels, nobody can deny it him that he does ſo. But here let me aſk: this ſeeing, is it the perception of the truth of the propoſition, or of this, that it is a revelation from God? This feeling, is it a perception of an inclination or fancy to do ſomething, or of the ſpirit of God moving that inclination? Theſe are two very different perceptions, and muſt be carefully diſtinguiſhed, if we would not impoſe upon ourſelves. I may perceive the truth of a propoſition, and yet not perceive that it is an immediate revelation from God. I may perceive the truth of a propoſition in Euclid, without its being or my perceiving it to be a revelation: nay, I may perceive I came not by this knowledge in a natural way, and ſo may conclude it revealed, without perceiving that it is a revelation from God; becauſe there be ſpirits, which, without being divinely commiſſioned, may excite thoſe ideas in me, and lay them in ſuch order before my mind, that I may perceive their connexion. So that the knowledge of any propoſition coming into my mind, I know not how, is not a perception that it is from God. Much leſs is a ſtrong perſuaſion, that it is true, a perception that it is from God, or ſo much as true. But however it be called light and ſeeing, I ſuppoſe it is at moſt but belief and aſſurance: and the propoſition taken for a revelation, is not ſuch as they know to be true, but take to be true. For where a propoſition is known to be true, revelation is needleſs: and it is hard to conceive how there can be a revelation to any one of what he knows already. If therefore it be a propoſition which they are perſuaded, but do not know, to be true, whatever they may call it, it is not ſeeing, but believing. For theſe are two ways, whereby truth comes into the mind, wholly diſtinct, ſo that one is not the other. What I ſee I know to be ſo by the evidence of the thing itſelf: what I believe I take to be ſo upon the teſtimony of another: but this teſtimony I muſt know to be given, or elſe what ground have I of believing? I muſt ſee that it is God that reveals this to me, or elſe I ſee nothing. The queſtion then here is, how do I know that God is the revealer of this to me; that this impreſ-

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ſion is made upon my mind by his Holy Spirit, and that therefore I ought to obey it? If I know not this, how great ſoever the aſſurance is that I am poſſeſſed with, it is groundleſs; whatever light I pretend to, it is but enthuſiaſm. For whether the propoſition ſuppoſed to be revealed, be in itſelf evidently true, or viſibly probable, or by the natural ways of knowledge uncertain, the propoſition that muſt be well grounded, and manifeſted to be true, is this, that God is the revealer of it, and that what I take to be a revelation is certainly put into my mind by him, and is not an illuſion dropped in by ſome other ſpirit, or raiſed by my own fancy. For if I miſtake not, theſe men receive it for true, becauſe they preſume God revealed it. Does it not then ſtand them upon, to examine on what grounds they preſume it to be a revelation from God? or elſe all their confidence is mere preſumption: and this light, they are ſo dazzled with, is nothing but an ignis fatuus that leads them conſtantly round in this circle; it is a revelation, becauſe they firmly believe it, and they believe it, becauſe it is a revelation.

Enthuſiaſm fails of evidence, that the propoſition is from God.

§. 11. In all that is of divine revelation, there is need of no other proof but that it is an inſpiration from God: for he can neither deceive nor be deceived. But how ſhall it be known that any propoſition in our minds is a truth infuſed by God; a truth that is revealed to us by him, which he declares to us, and therefore we ought to believe? Here it is that enthuſiaſm fails of the evidence it pretends to. For men thus poſſeſſed boaſt of a light whereby they ſay they are enlightened, and brought into the knowledge of this or that truth. But if they know it to be a truth, they muſt know it to be ſo, either by its own ſelf-evidence to natural reaſon, or by the rational proofs that make it out to be ſo. If they ſee and know it to be a truth, either of theſe two ways, they in vain ſuppoſe it to be a revelation. For they know it to be true the ſame way, that any other man naturally may know that it is ſo without the help of revelation. For thus all the truths, of what kind ſoever, that men uninſpired are enlightened with,

came into their minds, and are eſtabliſhed there. If they ſay they know it to be true, becauſe it is a revelation from God, the reaſon is good: but then it will be demanded how they know it to be a revelation from God. If they ſay, by the light it brings with it, which ſhines bright in their minds, and they cannot reſiſt: I beſeech them to conſider whether this be any more than what we have taken notice of already, viz. that it is a revelation, becauſe they ſtrongly believe it to be true. For all the light they ſpeak of is but a ſtrong, though ungrounded, perſuaſion of their own minds, that it is a truth. For rational grounds from proofs that it is a truth, they muſt acknowledge to have none; for then it is not received as a revelation, but upon the ordinary grounds that other truths are received: and if they believe it to be true, becauſe it is a revelation, and have no other reaſon for its being a revelation, but becauſe they are fully perſuaded without any other reaſon that it is true; they believe it to be a revelation, only becauſe they ſtrongly believe it to be a revelation; which is a very unſafe ground to proceed on, either in our tenets or actions. And what readier way can there be to run ourſelves into the moſt extravagant errours and miſcarriages, than thus to ſet up fancy for our ſupreme and ſole guide, and to believe any propoſition to be true, any action to be right, only becauſe we believe it to be ſo? The ſtrength of our perſuaſions is no evidence at all of their own rectitude: crooked things may be as ſtiff and inflexible as ſtraight: and men may be as poſitive and peremptory in errour as in truth. How come elſe the untractable zealots in different and oppoſite parties? For if the light, which every one thinks he has in his mind, which in this caſe is nothing but the ſtrength of his own perſuaſion, be an evidence that it is from God, contrary opinions have the ſame title to inſpirations; and God will be not only the father of lights, but of oppoſite and contradictory lights, leading men contrary ways; and contradictory propoſitions will be divine truths, if an ungrounded ſtrength of aſſurance be an evidence, that any propoſition is a divine revelation.

§. 12.

§. 12. This cannot be otherwiſe, whilſt firmneſs of perſuaſion is made the cauſe of believing, and confidence of being in the right is made an argument of truth. St. Paul himſelf believed he did well, and that he had a call to it when he perſecuted the Chriſtians, whom he confidently thought in the wrong: but yet it was he, and not they, who were miſtaken. Good men are men ſtill, liable to miſtakes; and are ſometimes warmly engaged in errours, which they take for divine truths, ſhining in their minds with the clearеſt light.

Firmneſs of perſuaſion no proof that any propoſition is from God.

§. 13. Light, true light, in the mind is, or can be nothing elſe but the evidence of the truth of any propoſition; and if it be not a ſelf-evident propoſition, all the light it has, or can have, is from the clearneſs and validity of thoſe proofs, upon which it is received. To talk of any other light in the underſtanding is to put ourſelves in the dark, or in the power of the Prince of darkneſs, and by our own conſent to give ourſelves up to deluſion to believe a lie. For if ſtrength of perſuaſion be the light, which muſt guide us; I aſk how ſhall any one diſtinguiſh between the deluſions of Satan, and the inſpirations of the Holy Ghoſt? He can transform himſelf into an angel of light. And they who are led by this ſon of the morning, are as fully ſatisfied of the illumination, i. e. are as ſtrongly perſuaded, that they are enlightened by the ſpirit of God, as any one who is ſo: they acquieſce and rejoice in it, are acted by it: and nobody can be more ſure, nor more in the right (if their own ſtrong belief may be judge) than they.

Light in the mind, what.

§. 14. He therefore that will not give himſelf up to all the extravagancies of deluſion and errour, muſt bring this guide of his light within to the trial. God, when he makes the prophet, does not unmake the man. He leaves all his faculties in the natural ſtate, to enable him to judge of his inſpirations, whether they be of divine original or no. When he illuminates the mind with ſupernatural light, he does not extinguiſh that which is

Revelation muſt be judged of by reaſon.

natural. If he would have us aſſent to the truth of any propoſition, he either evidences that truth by the uſual methods of natural reaſon, or elſe makes it known to be a truth which he would have us aſſent to, by his authority; and convinces us that it is from him, by ſome marks which reaſon cannot be miſtaken in. Reaſon muſt be our laſt judge and guide in every thing. I do not mean that we muſt conſult reaſon, and examine whether a propoſition revealed from God can be made out by natural principles, and if it cannot, that then we may reject it: but conſult it we muſt, and by it examine, whether it be a revelation from God or no. And if reaſon finds it to be revealed from God, reaſon then declares for it, as much as for any other truth, and makes it one of her dictates. Every conceit that thoroughly warms our fancies muſt paſs for an inſpiration, if there be nothing but the ſtrength of our perſuaſions, whereby to judge of our perſuaſions: if reaſon muſt not examine their truth by ſomething extrinſecal to the perſuaſions themſelves, inſpirations and deluſions, truth and falſhood, will have the ſame meaſure, and will not be poſſible to be diſtinguiſhed.

Belief no proof of revelation.

§. 15. If this internal light, or any propoſition which under that title we take for inſpired, be conformable to the principles of reaſon, or to the word of God, which is atteſted revelation, reaſon warrants it, and we may ſafely receive it for true, and be guided by it in our belief and actions: if it receive no teſtimony nor evidence from either of theſe rules, we cannot take it for a revelation, or ſo much as for true, till we have ſome other mark that it is a revelation, beſides our believing that it is ſo. Thus we ſee the holy men of old, who had revelations from God, had ſomething elſe beſides that internal light of aſſurance in their own minds, to teſtify to them that it was from God. They were not left to their own perſuaſions alone, that thoſe perſuaſions were from God; but had outward ſigns to convince them of the author of thoſe revelations. And when they were to convince others, they had a power given them to juſtify the truth of their commiſſion from heaven, and by viſible

viſible ſigns to aſſert the divine authority of a meſſage they were ſent with. Moſes ſaw the buſh burn without being conſumed, and heard a voice out of it. This was ſomething beſides finding an impulſe upon his mind to go to Pharaoh, that he might bring his brethren out of Egypt: and yet he thought not this enough to authorize him to go with that meſſage, till God, by another miracle of his rod turned into a ſerpent, had aſſured him of a power to teſtify his miſſion, by the ſame miracle repeated before them, whom he was ſent to. Gideon was ſent by an angel to deliver Iſrael from the Midianites, and yet he deſired a ſign to convince him that this commiſſion was from God. Theſe, and ſeveral the like inſtances to be found among the prophets of old, are enough to ſhow that they thought not an inward ſeeing or perſuaſion of their own minds, without any other proof, a ſufficient evidence that it was from God; though the ſcripture does not every where mention their demanding or having ſuch proofs.

§. 16. In what I have ſaid I am far from denying, that God can, or doth ſometimes enlighten men's minds in the apprehending of certain truths, or excite them to good actions by the immediate influence and aſſiſtance of the holy ſpirit, without any extraordinary ſigns accompanying it. But in ſuch caſes too we have reaſon and ſcripture, unerring rules to know whether it be from God or no. Where the truth embraced is conſonant to the revelation in the written word of God, or the action conformable to the dictates of right reaſon or holy writ, we may be aſſured that we run no riſk in entertaining it as ſuch; becauſe though perhaps it be not an immediate revelation from God, extraordinarily operating on our minds, yet we are ſure it is warranted by that revelation which he has given us of truth. But it is not the ſtrength of our private perſuaſion within ourſelves, that can warrant it to be a light or motion from heaven; nothing can do that but the written word of God without us, or that ſtandard of reaſon which is common to us with all men. Where reaſon or ſcripture is expreſs for any opinion or action, we may receive it as of divine authority; but it is not the ſtrength of our own

own perſuaſions which can by itſelf give it that ſtamp. The bent of our own minds may favour it as much as we pleaſe; that may ſhow it to be a fondling of our own, but will by no means prove it to be an offspring of heaven, and of divine original.

CHAP. XX.

Of Wrong Aſſent, or Errour.

Cauſes of errour.

§. 1. KNOWLEDGE being to be had only of viſible and certain truth, errour is not a fault of our knowledge, but a miſtake of our judgment, giving aſſent to that which is not true.

But if aſſent be grounded on likelihood, if the proper object and motive of our aſſent be probability, and that probability conſiſts in what is laid down in the foregoing chapters, it will be demanded how men come to give their aſſents contrary to probability. For there is nothing more common than contrariety of opinions; nothing more obvious than that one man wholly diſbelieves, what another only doubts of, and a third ſtedfaſtly believes, and firmly adheres to. The reaſons whereof, though they may be very various, yet, I ſuppoſe, may all be reduced to theſe four:

1. Want of proofs.
2. Want of ability to uſe them.
3. Want of will to uſe them.
4. Wrong meaſures of probability.

1. Want of proofs.

§. 2. Firſt, by want of proofs, I do not mean only the want of thoſe proofs which are no where extant, and ſo are no where to be had; but the want even of thoſe proofs which are in being, or might be procured. And thus men want proofs who have not the convenience or opportunity to make experiments and obſervations themſelves tending to the proof of any propoſition; nor likewiſe the convenience to inquire into and collect the teſtimonies of

of others: and in this ſtate are the greateſt part of mankind, who are given up to labour, and enſlaved to the neceſſity of their mean condition, whoſe lives are worn out only in the proviſions for living. Theſe men's opportunities of knowledge and inquiry are commonly as narrow as their fortunes; and their underſtandings are but little inſtructed, when all their whole time and pains is laid out to ſtill the croaking of their own bellies, or the cries of their children. It is not to be expected that a man, who drudges on all his life in a laborious trade, ſhould be more knowing in the variety of things done in the world, than a pack-horſe, who is driven conſtantly forwards and backwards in a narrow lane, and dirty road, only to market, ſhould be ſkilled in the geography of the country. Nor is it at all more poſſible, that he who wants leiſure, books, and languages, and the opportunity of converſing with variety of men, ſhould be in a condition to collect thoſe teſtimonies and obſervations which are in being, and are neceſſary to make out many, nay moſt of the propoſitions that, in the ſocieties of men, are judged of the greateſt moment; or to find out grounds of aſſurance ſo great as the belief of the points he would build on them is thought neceſſary. So that a great part of mankind are, by the natural and unalterable ſtate of things in this world, and the conſtitution of human affairs, unavoidably given over to invincible ignorance of thoſe proofs on which others build, and which are neceſſary to eſtabliſh thoſe opinions: the greateſt part of men, having much to do to get the means of living, are not in a condition to look after thoſe of learned and laborious inquiries.

Obj. What ſhall become of thoſe who want them, anſwered.

§. 3. What ſhall we ſay then? Are the greateſt part of mankind, by the neceſſity of their condition, ſubjected to unavoidable ignorance in thoſe things which are of greateſt importance to them? (for of theſe it is obvious to inquire.) Have the bulk of mankind no other guide but accident, and blind chance, to conduct them to their happineſs or miſery? Are the current opinions, and licenſed guides of every country, ſufficient evidence

evidence and security to every man to venture his great concernments on; nay, his everlasting happiness or misery? Or can those be the certain and infallible oracles and standards of truth, which teach one thing in Christendom, and another in Turky? Or shall a poor countryman be eternally happy for having the chance to be born in Italy; or a day-labourer be unavoidably lost, because he had the ill luck to be born in England? How ready some men may be to say some of these things, I will not here examine: but this I am sure, that men must allow one or other of these to be true (let them choose which they please) or else grant, that God has furnished men with faculties sufficient to direct them in the way they should take, if they will but seriously employ them that way, when their ordinary vocations allow them the leisure. No man is so wholly taken up with the attendance on the means of living, as to have no spare time at all to think of his soul, and inform himself in matters of religion. Were men as intent upon this, as they are on things of lower concernment, there are none so enslaved to the necessities of life, who might not find many vacancies that might be husbanded to this advantage of their knowledge.

People hindered from inquiry.

§. 4. Besides those, whose improvements and informations are straitened by the narrowness of their fortunes, there are others whose largeness of fortune would plentifully enough supply books and other requisites for clearing of doubts, and discovering of truth: but they are cooped in close, by the laws of their countries, and the strict guards of those whose interest it is to keep them ignorant, lest, knowing more, they should believe the less in them. These are as far, nay farther from the liberty and opportunities of a fair inquiry, than these poor and wretched labourers we before spoke of. And, however they may seem high and great, are confined to narrowness of thought, and enslaved in that which should be the freest part of man, their understandings. This is generally the case of all those who live in places where care is taken to propagate truth without knowledge; where men are forced, at a venture, to be of the religion of

of the country; and muſt therefore ſwallow down opinions, as ſilly people do empirics pills, without knowing what they are made of, or how they will work, and having nothing to do but believe that they will do the cure: but in this are much more miſerable than they, in that they are not at liberty to refuſe ſwallowing what perhaps they had rather let alone; or to chooſe the phyſician, to whoſe conduct they would truſt themſelves.

2. Want of ſkill to uſe them.

§. 5. Secondly, thoſe who want ſkill to uſe thoſe evidences they have of probabilities; who cannot carry a train of conſequences in their heads; nor weigh exactly the preponderancy of contrary proofs and teſtimonies, making every circumſtance its due allowance; may be eaſily miſled to aſſent to poſitions that are not probable. There are ſome men of one, ſome but of two ſyllogiſms, and no more; and others that can but advance one ſtep farther. Theſe cannot always diſcern that ſide on which the ſtrongeſt proofs lie; cannot conſtantly follow that which in itſelf is the more probable opinion. Now that there is ſuch a difference between men, in reſpect of their underſtandings, I think nobody, who has had any converſation with his neighbours, will queſtion: though he never was at Weſtminſter-hall, or the Exchange, on the one hand; or at Alms-houſes, or Bedlam, on the other. Which great difference in men's intellectuals, whether it riſes from any defect in the organs of the body, particularly adapted to thinking; or in the dulneſs or untractableneſs of thoſe faculties for want of uſe; or, as ſome think, in the natural differences of men's ſouls themſelves; or ſome, or all of theſe together; it matters not here to examine: only this is evident, that there is a difference of degrees in men's underſtandings, apprehenſions, and reaſonings, to ſo great a latitude, that one may, without doing injury to mankind, affirm, that there is a greater diſtance between ſome men and others, in this reſpect, than between ſome men and ſome beaſts. But how this comes about, is a ſpeculation, though of great conſequence, yet not neceſſary to our preſent purpoſe.

3. Want of will to use them.

§. 6. Thirdly, there are another sort of people that want proofs, not because they are out of their reach, but because they will not use them: who, though they have riches and leisure enough, and want neither parts nor other helps, are yet never the better for them. Their hot pursuit of pleasure, or constant drudgery in business, engages some men's thoughts elsewhere: laziness and oscitancy in general, or a particular aversion for books, study and meditation, keep others from any serious thoughts at all: and some out of fear, that an impartial inquiry would not favour those opinions which best suit their prejudices, lives, and designs, content themselves, without examination, to take upon trust what they find convenient and in fashion. Thus most men, even of those that might do otherwise, pass their lives without an acquaintance with, much less a rational assent to, probabilities they are concerned to know, though they lie so much within their view, that to be convinced of them they need but turn their eyes that way. We know some men will not read a letter which is supposed to bring ill news; and many men forbear to cast up their accounts, or so much as think upon their estates, who have reason to fear their affairs are in no very good posture. How men, whose plentiful fortunes allow them leisure to improve their understandings, can satisfy themselves with a lazy ignorance, I cannot tell: but methinks they have a low opinion of their souls, who lay out all their incomes in provisions for the body, and employ none of it to procure the means and helps of knowledge; who take great care to appear always in a neat and splendid outside, and would think themselves miserable in coarse cloaths, or a patched coat, and yet contentedly suffer their minds to appear abroad in a pie-bald livery of coarse patches, and borrowed shreds, such as it has pleased chance, or their country-taylor (I mean the common opinion of those they have conversed with) to clothe them in. I will not here mention how unreasonable this is for men that ever think of a future state, and their concernment in it, which no rational man can avoid to do sometimes: nor shall I take notice what a shame

shame and confusion it is, to the greatest contemners of knowledge, to be found ignorant in things they are concerned to know. But this at least is worth the consideration of those who call themselves gentlemen, that however they may think credit, respect, power and authority, the concomitants of their birth and fortune, yet they will find all these still carried away from them, by men of lower condition, who surpass them in knowledge. They who are blind will always be led by those that see, or else fall into the ditch: and he is certainly the most subjected, the most enslaved, who is so in his understanding. In the forgoing instances, some of the causes have been shown of wrong assent, and how it comes to pass, that probable doctrines are not always received with an assent proportionable to the reasons which are to be had for their probability: but hitherto we have considered only such probabilities, whose proofs do exist, but do not appear to him who embraces the errour.

4. Wrong measures of probability; whereof,

§. 7. Fourthly, there remains yet the last sort, who, even where the real probabilities appear, and are plainly laid before them, do not admit of the conviction, nor yield unto manifest reasons, but do either ἐπέχειν, suspend their assent, or give it to the less probable opinion: And to this danger are those exposed, who have taken up wrong measures of probability; which are,

1. Propositions that are not in themselves certain and evident, but doubtful and false, taken up for principles.

2. Received hypotheses.

3. Predominant passions or inclinations.

4. Authority.

1. Doubtful propositions taken for principles.

§. 8. First, the first and firmest ground of probability is the conformity any thing has to our own knowledge; especially that part of our knowledge which we have embraced, and continue to look on as principles. These have so great an influence upon our opinions, that it is usually by them we judge of truth, and measure probability to that degree, that what is inconsistent with our princi-

ples, is ſo far from paſſing for probable with us, that it will not be allowed poſſible. The reverence borne to theſe principles is ſo great, and their authority ſo paramount to all other, that the teſtimony not only of other men, but the evidence of our own ſenſes are often rejected, when they offer to vouch any thing contrary to theſe eſtabliſhed rules. How much the doctrine of innate principles, and that principles are not to be proved or queſtioned, has contributed to this, I will not here examine. This I readily grant, that one truth cannot contradict another: but withal I take leave alſo to ſay, that every one ought very carefully to beware what he admits for a principle, to examine it ſtrictly, and ſee whether he certainly knows it to be true of itſelf by its own evidence, or whether he does only with aſſurance believe it to be ſo upon the authority of others. For he hath a ſtrong biaſs put into his underſtanding, which will unavoidably miſguide his aſſent, who hath imbibed wrong principles, and has blindly given himſelf up to the authority of any opinion in itſelf not evidently true.

§. 9. There is nothing more ordinary, than children's receiving into their minds propoſitions (eſpecially about matters of religion) from their parents, nurſes, or thoſe about them: which being inſinuated into their unwary, as well as unbiaſſed underſtandings, and faſtened by degrees, are at laſt (equally whether true or falſe) rivetted there by long cuſtom and education, beyond all poſſibility of being pulled out again. For men, when they are grown up, reflecting upon their opinions, and finding thoſe of this ſort to be as ancient in their minds as their very memories, not having obſerved their early inſinuation, nor by what means they got them, they are apt to reverence them as ſacred things, and not to ſuffer them to be prophaned, touched, or queſtioned: they look on them as the Urim and Thummim ſet up in their minds immediately by God himſelf, to be the great and unerring deciders of truth and falſhood, and the judges to which they are to appeal in all manner of controverſies.

§. 10. This opinion of his principles (let them be what they will) being once eſtabliſhed, in any one's mind,

mind, it is eaſy to be imagined what reception any propoſition ſhall find, how clearly ſoever proved, that ſhall invalidate their authority, or at all thwart with theſe internal oracles; whereas the groſſeſt abſurdities and improbabilities, being but agreeable to ſuch principles, go down glibly, and are eaſily digeſted. The great obſtinacy that is to be found in men firmly believing quite contrary opinions, though many times equally abſurd, in the various religions of mankind, are as evident a proof, as they are an unavoidable conſequence, of this way of reaſoning from received traditional principles. So that men will diſbelieve their own eyes, renounce the evidence of their ſenſes, and give their own experience the lye, rather than admit of any thing diſagreeing with theſe ſacred tenets. Take an intelligent Romaniſt, that, from the firſt dawning of any notions in his underſtanding, hath had this principle conſtantly inculcated, viz. that he muſt believe as the church (i. e. thoſe of his communion) believes, or that the pope is infallible; and this he never ſo much as heard queſtioned, till at forty or fifty years old he met with one of other principles: how is he prepared eaſily to ſwallow, not only againſt all probability, but even the clear evidence of his ſenſes, the doctrine of tranſubſtantiation? This principle has ſuch an influence on his mind, that he will believe that to be fleſh which he ſees to be bread. And what way will you take to convince a man of any improbable opinion he holds, who, with ſome philoſophers, hath laid down this as a foundation of reaſoning, that he muſt believe his reaſon (for ſo men improperly call arguments drawn from their principles) againſt his ſenſes? Let an enthuſiaſt be principled, that he or his teacher is inſpired, and acted by an immediate communication of the divine ſpirit, and you in vain bring the evidence of clear reaſons againſt his doctrine. Whoever therefore have imbibed wrong principles, are not, in things inconſiſtent with theſe principles, to be moved by the moſt apparent and convincing probabilities, till they are ſo candid and ingenuous to themſelves, as to be perſuaded to examine even thoſe very principles, which many never ſuffer themſelves to do.

2. Received hypotheses.

§. 11. Secondly, next to these are men whose understandings are cast into a mould, and fashioned just to the size of a received hypothesis. The difference between these and the former is, that they will admit of matter of fact, and agree with dissenters in that; but differ only in assigning of reasons, and explaining the manner of operation. These are not at that open defiance with their senses, with the former: they can endure to hearken to their information a little more patiently; but will by no means admit of their reports in the explanation of things; nor be prevailed on by probabilities, which would convince them that things are not brought about just after the same manner that they have decreed within themselves that they are. Would it not be an insufferable thing for a learned professor, and that which his scarlet would blush at, to have his authority of forty years standing, wrought out of hard rock Greek and Latin, with no small expence of time and candle, and confirmed by general tradition and a reverend beard, in an instant overturned by an upstart novelist? Can any one expect that he should be made to confess, that what he taught his scholars thirty years ago, was all errour and mistake; and that he sold them hard words and ignorance at a very dear rate? What probabilities, I say, are sufficient to prevail in such a case? And who ever by the most cogent arguments will be prevailed with to disrobe himself at once of all his old opinions, and pretences to knowledge and learning, which with hard study he hath all his time been labouring for; and turn himself out stark naked, in quest afresh of new notions? All the arguments that can be used, will be as little able to prevail, as the wind did with the traveller to part with his cloke, which he held only the faster. To this of wrong hypothesis may be reduced the errours that may be occasioned by a true hypothesis, or right principles, but not rightly understood. There is nothing more familiar than this. The instances of men contending for different opinions, which they all derive from the infallible truth of the scripture, are an undeniable proof of it. All that call themselves Christians allow the text, that says,

says, μετανοεῖτε, to carry in it the obligation to a very weighty duty. But yet how very erroneous will one of their practices be, who, understanding nothing but the French, take this rule with one translation to be "repentez vous," repent; or with the other, "faitiez penitence," do penance!

§. 12. Thirdly, probabilities, which cross men's appetites and prevailing passions, run the same fate. Let ever so much probability hang on one side of a covetous man's reasoning, and money on the other; it is easy to foresee which will outweigh. Earthly minds, like mud-walls, resist the strongest batteries: and though perhaps sometimes the force of a clear argument may make some impression, yet they nevertheless stand firm, and keep out the enemy truth, that would captivate or disturb them. Tell a man, passionately in love, that he is jilted; bring a score of witnesses of the falshood of his mistress, it is ten to one but three kind words of hers shall invalidate all their testimonies. "Quod volumus, facile credimus;" What suits our wishes, is forwardly believed; is, I suppose, what every one hath more than once experimented: and though men cannot always openly gainsay or resist the force of manifest probabilities that make against them, yet yield they not to the argument. Not but that it is the nature of the understanding constantly to close with the more probable side; but yet a man hath a power to suspend and restrain its inquiries, and not permit a full and satisfactory examination, as far as the matter in question is capable, and will bear it to be made. Until that be done, there will be always these two ways left of evading the most apparent probabilities.

3. Predominant passions.

§. 13. First, that the arguments being (as for the most part they are) brought in words, there may be a fallacy latent in them: and the consequences being, perhaps, many in train, they may be some of them incoherent. There are very few discourses so short, clear, and consistent to which most men may not, with satisfaction enough to themselves, raise this doubt; and from whose conviction they may not, without reproach

The means of evading probabilities: 1. Supposed fallacy.

of disingenuity or unreasonableness, set themselves free with the old reply, "non persuadebis, etiamsi persuaseris;" Though I cannot answer, I will not yield.

2. Supposed arguments for the contrary.

§. 14. Secondly, manifest probabilities may be evaded, and the assent withheld upon this suggestion, that I know not yet all that may be said on the contrary side. And therefore though I be beaten, it is not necessary I should yield, not knowing what forces there are in reserve behind. This is a refuge against conviction so open and so wide, that it is hard to determine, when a man is quite out of the verge of it.

What probabilities determine the assent.

§. 15. But yet there is some end of it; and a man having carefully inquired into all the grounds of probability and unlikeliness, done his utmost to inform himself in all particulars fairly, and cast up the sum total on both sides; may in most cases come to acknowledge, upon the whole matter, on which side the probability rests: wherein some proofs in matter of reason, being suppositions upon universal experience, are so cogent and clear; and some testimonies in matter of fact so universal; that he cannot refuse his assent. So that, I think, we may conclude, that in propositions, where though the proofs in view are of most moment, yet there are sufficient grounds to suspect that there is either fallacy in words, or certain proofs as considerable to be produced on the contrary side; there assent, suspence, or dissent, are often voluntary actions: but where the proofs are such as make it highly probable, and there is not sufficient ground to suspect, that there is either fallacy of words (which sober and serious consideration may discover) nor equally valid proofs, yet undiscovered, latent on the other side (which also the nature of the thing may, in some cases, make plain to a considerate man) there, I think, a man, who has weighed them, can scarce refuse his assent to the side, on which the greater probability appears. Whether it be probable, that a promiscuous jumble of printing letters should often fall into a method and order, which should stamp on paper a coherent discourse; or that a blind fortuitous concourse of atoms, not

not guided by an underſtanding agent, ſhould frequently conſtitute the bodies of any ſpecies of animals: in theſe and the like caſes, I think, nobody that conſiders them can be one jot at a ſtand which ſide to take, nor at all waver in his aſſent. Laſtly, when there can be no ſuppoſition (the thing in its own nature indifferent, and wholly depending upon the teſtimony of witneſſes) that there is as fair teſtimony againſt, as for the matter of fact atteſted; which by inquiry is to be learned, v. g. whether there was one thouſand ſeven hundred years ago ſuch a man at Rome as Julius Cæſar: in all ſuch caſes, I ſay, I think it is not in any rational man's power to refuſe his aſſent; but that it neceſſarily follows, and cloſes with ſuch probabilities. In other leſs clear caſes, I think, it is in man's power to ſuſpend his aſſent; and perhaps content himſelf with the proofs he has, if they favour the opinion that ſuits with his inclination or intereſt, and ſo ſtop from farther ſearch. But that a man ſhould afford his aſſent to that ſide, on which the leſs probability appears to him, ſeems to me utterly impracticable, and as impoſſible, as it is to believe the ſame thing probable and improbable at the ſame time.

Where it is in our power to ſuſpend it.

§. 16. As knowledge is no more arbitrary than perception; ſo, I think, aſſent is no more in our power than knowledge. When the agreement of any two ideas appears to our minds, whether immediately, or by the aſſiſtance of reaſon, I can no more refuſe to perceive, no more avoid knowing it, than I can avoid ſeeing thoſe objects which I turn my eyes to, and look on in day-light: and what upon full examination I find the moſt probable, I cannot deny my aſſent to. But though we cannot hinder our knowledge, where the agreement is once perceived, nor our aſſent, where the probability manifeſtly appears upon due conſideration of all the meaſures of it: yet we can hinder both knowledge and aſſent, by ſtopping our inquiry, and not employing our faculties in the ſearch of any truth. If it were not ſo, ignorance, errour, or infidelity could not in any caſe be a fault. Thus in ſome caſes we can prevent or ſuſpend our aſſent: but can a man, verſed in modern or ancient hiſtory, doubt

whether there is such a place as Rome, or whether there was such a man as Julius Cæsar? Indeed there are millions of truths, that a man is not, or may not think himself concerned to know; as whether our king Richard the Third was crooked, or no; or whether Roger Bacon was a mathematician, or a magician. In these and such-like cases, where the assent one way or other is of no importance to the interest of any one; no action, no concernment of his, following or depending thereon; there it is not strange, that the mind should give itself up to the common opinion, or render itself to the first comer. These and the like opinions are of so little weight and moment, that, like motes in the sun, their tendencies are very rarely taken notice of. They are there, as it were, by chance, and the mind lets them float at liberty. But where the mind judges that the proposition has concernment in it; where the assent or not assenting is thought to draw consequences of moment after it, and good and evil to depend on choosing or refusing the right side; and the mind sets itself seriously to inquire and examine the probability; there, I think, it is not in our choice to take which side we please, if manifest odds appear on either. The greater probability, I think, in that case will determine the assent: and a man can no more avoid assenting, or taking it to be true, where he perceives the greater probability, than he can avoid knowing it to be true, where he perceives the agreement or disagreement of any two ideas.

If this be so, the foundation of errour will lie in wrong measures of probability; as the foundation of vice in wrong measures of good.

4. Authority. §. 17. Fourthly, the fourth and last wrong measure of probability I shall take notice of, and which keeps in ignorance or errour more people than all the other together, is that which I mentioned in the foregoing chapter; I mean, the giving up our assent to the common received opinions, either of our friends or party, neighbourhood or country. How many men have no other ground for their tenets, than the supposed honesty, or learning, or number, of those of the same profession? As if honest or bookish men could not err,

err, or truth were to be established by the vote of the multitude: yet this with most men serves the turn. The tenet has had the attestation of reverend antiquity, it comes to me with the passport of former ages, and therefore I am secure in the reception I give it: other men have been, and are of the same opinion (for that is all is said) and therefore it is reasonable for me to embrace it. A man may more justifiably throw up cross and pile for his opinions, than take them up by such measures. All men are liable to errour, and most men are in many points, by passion or interest, under temptation to it. If we could but see the secret motives that influenced the men of name and learning in the world, and the leaders of parties, we should not always find that it was the embracing of truth for its own sake, that made them espouse the doctrines they owned and maintained. This at least is certain, there is not an opinion so absurd, which a man may not receive upon this ground. There is no errour to be named, which has not had its professors: and a man shall never want crooked paths to walk in, if he thinks that he is in the right way, wherever he has the footsteps of others to follow.

Men not in so many errours as imagined.

§. 18. But, notwithstanding the great noise is made in the world about errours and opinions, I must do mankind that right, as to say there are not so many men in errours and wrong opinions, as is commonly supposed. Not that I think they embrace the truth; but indeed, because concerning those doctrines they keep such a stir about, they have no thought, no opinion at all. For if any one should a little catechise the greatest part of the partizans of most of the sects in the world, he would not find, concerning those matters they are so zealous for, that they have any opinions of their own: much less would he have reason to think, that they took them upon the examination of arguments, and appearance of probability. They are resolved to stick to a party, that education or interest has engaged them in; and there, like the common soldiers of an army, show their courage and warmth as their leaders direct, without ever examining or so much as knowing the cause they contend

for. If a man's life shows, that he has no serious regard for religion; for what reason should we think, that he beats his head about the opinions of his church, and troubles himself to examine the grounds of this or that doctrine? It is enough for him to obey his leaders, to have his hand and his tongue ready for the support of the common cause, and thereby approve himself to those, who can give him credit, preferment or protection in that society. Thus men become professors of, and combatants for, those opinions they were never convinced of, nor proselytes to; no, nor ever had so much as floating in their heads: and though one cannot say, there are fewer improbable or erroneous opinions in the world than there are; yet it is certain, there are fewer that actually assent to them, and mistake them for truth, than is imagined.

CHAP. XXI.

Of the Division of the Sciences.

Three sorts. §. 1. ALL that can fall within the compass of human understanding, being either, first, the nature of things, as they are in themselves, their relations, and their manner of operation: or, secondly, that which man himself ought to do, as a rational and voluntary agent, for the attainment of any end, especially happiness: or, thirdly, the ways and means, whereby the knowledge of both the one and the other of these is attained and communicated: I think, science may be divided properly into these three sorts.

1. Physica. §. 2. First, the knowledge of things, as they are in their own proper beings, their constitution, properties, and operations; whereby I mean not only matter and body, but spirits also, which have their proper natures, constitutions, and operations, as well as bodies. This, in a little more enlarged sense of the word, I call Φυσικὴ, or natural philosophy. The end of this is bare speculative truth; and whatsoever can afford

afford the mind of man any such, falls under this branch, whether it be God himself, angels, spirits, bodies, or any of their affections, as number, and figure, &c.

§. 3. Secondly, Πρακτικὴ, the skill of right applying our own powers and actions, for the attainment of things good and useful. The most considerable under this head is ethics, which is the seeking out those rules and measures of human actions, which lead to happiness, and the means to practise them. The end of this is not bare speculation, and the knowledge of truth; but right, and a conduct suitable to it. 2. Practica.

§. 4. Thirdly, the third branch may be called Σημειωτικὴ, or the doctrine of signs, the most usual whereof being words, it is aptly enough termed also Λογικὴ, logick; the business whereof is to consider the nature of signs, the mind makes use of for the understanding of things, or conveying its knowledge to others. For since the things the mind contemplates are none of them, besides itself, present to the understanding, it is necessary that something else, as a sign or representation of the thing it considers, should be present to it: and these are ideas. And because the scene of ideas that makes one man's thoughts, cannot be laid open to the immediate view of another, nor laid up any where but in the memory, a no very sure repository; therefore to communicate our thoughts to one another, as well as record them for our own use, signs of our ideas are also necessary. Those which men have found most convenient, and therefore generally make use of, are articulate sounds. The consideration then of ideas and words, as the great instruments of knowledge, makes no despicable part of their contemplation, who would take a view of human knowledge in the whole extent of it. And perhaps if they were distinctly weighed, and duly considered, they would afford us another sort of logic and critic, than what we have been hitherto acquainted with. Σημειωτικὴ.

§. 5. This seems to me the first and most general, as well as natural division of the objects of our understanding. For a man can employ his thoughts about nothing, but either the contemplation of things them- This is the first division of the objects of knowledge.

selves

selves for the discovery of truth; or about the things in his own power, which are his own actions, for the attainment of his own ends; or the signs the mind makes use of both in the one and the other, and the right ordering of them for its clearer information. All which three, viz. things as they are in themselves knowable; actions as they depend on us, in order to happiness; and the right use of signs in order to knowledge, being toto cœlo different, they seemed to me to be the three great provinces of the intellectual world, wholly separate and distinct one from another.

The End of the Essay of HUMAN UNDERSTANDING.

A

DEFENCE

OF

Mr. LOCKE's OPINION

CONCERNING

PERSONAL IDENTITY.

A

DEFENCE of Mr. LOCKE's OPINION

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THE candid author of the late eſſay upon perſonal identity cannot juſtly be offended with any attempt to explain and vindicate Mr. Locke's hypotheſis, if it is carried on in the ſame ſpirit, though it ſhould be attended with the overthrow of ſome of his own favourite notions; ſince he owns that it is of conſequence to form right opinions on this point: which was indeed once deemed an important one, how little ſoever ſuch may be regarded now-a-days. I ſhall proceed therefore, without farther apology, to ſettle the terms of this queſtion, and endeavour to ſtate it ſo as to bring matters to a ſhort and clear determination.

Now the word perſon, as is well obſerved by Mr. Locke (the diſtinguiſhing excellence of whoſe writings conſiſts in ſticking cloſe to the point in hand, and ſtriking out all foreign and impertinent conſiderations) is properly a forenſic term, and here to be uſed in the ſtrict forenſic ſenſe, denoting ſome ſuch quality or modification in man as denominates him a moral agent, or an accountable creature; renders him the proper ſubject of laws, and a true object of rewards or puniſhments. When we apply it to any man, we do not treat of him abſolutely, and in groſs; but under a particular relation or preciſion: we do not comprehend or concern ourſelves about the ſeveral inherent properties which accompany him in real exiſtence, which go to the making up the whole complex notion of an active and intelligent being; but arbitrarily abſtract one ſingle quality

or

or mode from all the reſt, and view him under that diſtinct preciſion only which points out the idea abovementioned, excluſive of every other idea that may belong to him in any other view, either as ſubſtance, quality, or mode. And therefore the conſideration of this ſame quality, or qualification, will not be altered by any others of which he may be poſſeſſed; but remains the ſame whatever he ſhall conſiſt of beſides: whether his ſoul be a material or immaterial ſubſtance, or no ſubſtance at all, as may appear from examining the import of theſe pronouns, I, thou, he, &c. [the grammatical meaning of ſuch words generally pointing out the true origin of our ideas primarily annexed to them] which both in their original ſenſe and common acceptation are purely perſonal terms, and as ſuch lead to no farther conſideration either of ſoul or body; nay, ſometimes are diſtinguiſhed from both, as in the following line,

Linquebant dulces animas, aut ægra trahebant
Corpora *.

An inquiry after the identity of ſuch perſon will be, whether at different times he is, or how he can be, and know himſelf to be the ſame in that reſpect, or equally ſubjected to the very ſame relations and conſequent obligations which he was under formerly, and in which he ſtill perceives himſelf to be involved, whenever he reflects upon himſelf and them. This we ſhall find to conſiſt in nothing more, than his becoming ſenſible at different times of what he had thought or done before; and being as fully convinced that he then thought or did it, as he now is of his preſent thoughts, acts, or exiſtence.

Beyond this we neither can, nor need go for evidence in any thing; this, we ſhall ſoon ſee, is the clear and only medium through which diſtant things can be diſcovered and compared together; which at the ſame time ſufficiently aſcertains and eſtabliſhes their ſeveral natures and realities reſpectively; ſo far as they relate to our-

* See Locke on 1 Cor. xv. 53.

ſelves

ſelves and to each other: or if this ſhould not be eſteemed ſufficient to that end, we ſhall find, in the laſt place, that there is nothing elſe left for it. This diſtinct conſciouſneſs of our paſt actions, from whence ariſe all the ideas of merit and demerit, will moſt undoubtedly be regarded with the ſtricteſt exactneſs in foro divino; and indeed has its due weight in foro humano, whenever it can be with certainty determined: wherever this appears to be wanting, all judicial proceedings are at an end. How plain ſoever any criminal act were, the man would now-a-days be acquitted from guilt in the commiſſion of it, and diſcharged from the penalties annexed to ſuch fact, could it at the ſame time be as plainly made out, that he was incapable of knowing what he did, or is now under a like incapacity of recollecting it. And it would be held a ſufficient reaſon for ſuch acquittal, that the puniſhment, or perſecution of a creature in theſe circumſtances, could not anſwer the end propoſed by ſociety in puniſhment, viz. the prevention of evil, the only end that I know of, which can juſtify puniſhments in any caſe. The reaſon then why ſuch a plea has uſually ſo ſmall regard paid to it in courts of juſtice, is, I apprehend, either the difficulty of having this incapacity proved with the ſame clearneſs that the fact itſelf is eſtabliſhed; or the common maxim that one crime, or criminal indiſpoſition, is not admiſſible in excuſe for another; as in caſes of drunkenneſs, violent paſſion, killing or maiming men by miſtake when one is engaged in an unlawful purſuit, &c. Or in ſome of theſe caſes perhaps men are puniſhed for the murders, &c. not becauſe they poſſibly may be conſcious of them, and yet that conſciouſneſs not appear; but that ſuch evils may be more effectually prevented by ſtriking at the remoter cauſe, i. e. exciting a ſalutary terrour of thoſe confeſſedly evil practices and habits, which are often found to terminate in ſuch fatal effects. A kind of injuſtice is here indeed committed by ſociety, which we have no reaſon to ſuppoſe will be admitted in foro divino, and ſome worſe inſtances may be ſeen in our ſtatute books. By the 23 of Hen. 8. a man becoming lunatic after an act of treaſon ſhall be liable to be arraigned, tried, and exe-

cuted. But Hale * in his P. C. says, That if a traitor becomes non compos before conviction he shall not be arraigned; if after conviction, he shall not be executed: and Hawkins † observes the same concerning those who have committed any capital offences.

In human courts, which cannot always dive into the hearts of men and discover the true springs of action, nor consequently weigh the effects and operations of each in an equal balance; in this state of ignorance and uncertainty, such a notorious indisposition as that of drunkenness, v. g. being generally a great fault in itself, is seldom allowed in extenuation of such others as are committed under its influence; nor indeed does it, I believe, often produce any new, materially different trains of thinking, or totally obliterate the old ones; but where this is really so, the Deity would make just abatement for such defect or disability, as was at the time both unconquerable and unavoidable; nor can we properly impute actions consequent upon any real disorder of the rational faculties, howsoever that disorder might have been contracted; and therefore all animadversions upon them must be in vain: nor is a man punishable for any thing beside the bare act of contracting such disorder, or for the original cause of this disability, how great or durable soever; the dangerous consequences of which he did, or might foresee. As is the case in some other confirmed habits, viz. that of swearing, &c. which often operate mechanically and unperceived, and in which therefore all the moral turpitude (or what is so accounted) arising from them, never can reach beyond the fountain-head from whence they are derived, and from which all the effects of them naturally, and even necessarily flow. We must therefore conclude in general, that a person's guilt is estimated according to his past and present consciousness of the offence, and of his having been the author of it. Nor is it merely his having forgotten the thing, but his having so far lost the notion of it out of his mind, that how frequently soever, or in what forcible manner soever, it may be pre-

* Hale P. C. 10. † Hawk. P. C. c.

sented

ſented to him again, he lies under an utter incapacity of becoming ſenſible and ſatisfied that he was ever privy to it before, which is affirmed to render this thing really none of his, or wholly exculpate him when called to anſwer for it. Suppoſe this ſame conſciouſneſs to return, his accountableneſs (call it perſonality, or what you pleaſe) will return along with it: that is, the infliction of evil upon him will now anſwer ſome purpoſe, and therefore he muſt be conſidered as now liable to it. Thus ſome wholly loſe the uſe of their intellectual faculties for a time, and recover them at intervals. In ſuch caſes they are conſidered as puniſhable by laws, and ſo declared by juries, in proportion to the probability of their being conſcious of the fact. Others lie under a partial deprivation of ſome one faculty for certain periods, while they continue to enjoy the reſt in tolerable perfection. I knew a learned man, who was ſaid to recollect with eaſe ſubjects upon which he had written, or any others that had been diſcuſſed before the laſt ten or fifteen years; could reaſon freely, and readily turn to the authors he had read upon them; but take him into the latter part of his life, and all was blank; when any late incidents were repeated to him, he would only ſtare at you, nor could he be made ſenſible of any one modern occurrence however ſtrongly repreſented to him. Was this man equally anſwerable for all tranſactions within the laſt period of his life, as for thoſe in the firſt? Or if he could have been made ſenſible of the latter part, but had irrecoverably loſt the former; could that former part have been in like manner imputed to him? Surely not. And the reaſon plainly is, becauſe ſociety could find no advantage from conſidering him as accountable in either caſe. Which ſhows perſonality to be ſolely a creature of ſociety, an abſtract conſideration of man, neceſſary for the mutual benefit of him and his fellows; i. e. a mere forenſic term; and to inquire after its criterion or conſtituent, is to inquire in what circumſtances ſocieties or civil combinations of men have in fact agreed to inflict evil upon individuals, in order to prevent evils to the whole body from any irregular member. Daily experience ſhows, that they always

make conſciouſneſs of the fact a neceſſary requiſite in ſuch puniſhment, and that all inquiry relates to the probability of ſuch conſciouſneſs. The execution of divine juſtice muſt proceed in the ſame manner. The Deity inflicts evil with a ſettled view to ſome end; and no end worthy of him can be anſwered by inflicting it as a puniſhment, unleſs to prevent other evils. Such end may be anſwered, if the patient is conſcious, or can be made conſcious of the fact, but not otherwiſe. And whence then does this difference in any one's moral capacity ariſe, but from that plain diverſity in his natural one? from his abſolute irretrievable want of conſciouſneſs in one caſe, and not in the other? Suppoſe now that one in the former condition kills a man; that he, or ſome part of what we call him, was ever ſo notoriouſly the inſtrument, or occaſion of that death; yet if he was either then inſenſible of the fact, or afterwards became ſo, and ſo continued: Would he be any more guilty of murder, than if that death had been occaſioned by another perſon? ſince at that time he was truly ſuch, or at leaſt is ſo now, notwithſtanding that moſt people might be apt to judge him ſtill the ſame, from a ſameneſs in outward circumſtances, (which generally ſupply the beſt means men have of judging) from his ſhape, mien, or appearance; though theſe often differ widely from the internal conſtitution, yet are as often miſtaken for it; and this accordingly thought and ſpoke of with little more philoſophical propriety, than when we, in the vulgar phraſe, deſcribe a man's condition by ſaying, We would not be in his coat.

Suppoſe one then in the ſituation abovementioned; could any pains, think you, inflicted on him ſuit the idea, or anſwer the ends of puniſhment, either with regard to himſelf, or others, farther than mere ſhow and deluſion? Rewards and puniſhments are evidently inſtituted for the benefit of ſociety, for the encouragement of virtue, or ſuppreſſion of vice, in the object thus rewarded or puniſhed, and in the reſt of the community; but what tendency to the above purpoſes can either of theſe have, if diſpenſed to one who is not ſo far himſelf as to become conſcious of having done any thing to

deſerve

deſerve it? What inſtruction is conveyed to him? What admonition to ſuch others, as are duly acquainted with the whole of the caſe, and ſee every circumſtance thus groſsly miſapplied? And as in theſe caſes, laws only can define the circumſtances in which a man ſhall be treated as accountable, they only can create guilt, i. e. guilt alſo is a forenſic term, or a mode of conſidering any action, which in its eſſence implies knowledge of a law, offence againſt that law, and a ſenſe of having offended againſt it; i. e. an after conſciouſneſs of the fact; without which after conſciouſneſs, puniſhment would be of little avail, as it would neither ſerve to guard the man himſelf againſt a like delinquency, nor tend to the warning of others, who by ſuch inflictions would openly perceive that they might chance to ſuffer pain, without being able to aſſign a reaſon for it.—Thus may perſonality be extended or contracted, and vary in various reſpects, times, and degrees, and thereby become liable to great confuſion, in our applying it to various ſubjects; yet is the ground and foundation of it fixed; and when once diſcovered, its conſequences are not leſs ſo, both before God and man.

Abſtract, general ideas (of which this is an eminent one) are alone productive of certain, uniform, and univerſal knowledge: Thus qualities of a certain kind, when abſtracted, or taken apart from nature, and ſet up for common ſtandards, are ſo far independent as to become abſolute, unmixed, or perfect in themſelves *, however different they may be found in their reſpective concretes. Thus goodneſs, juſtice, guilt, merit, &c. in general, are ever the ſame goodneſs, &c. all the world over, however imperfectly they may appear in any particular ſubjects, times, and places. In the ſame manner as a line, or the abſtract conſideration of length without thickneſs or breadth; the conſideration of ſurface, i. e. length and breadth without thickneſs, muſt be the ſame, in all intelligent beings of like faculties with us, though the natural ſubſtances which ſuggeſt them may differ

* Note 10. to King's Origin of Evil. Rem. k.

with an endleſs variety. Let perſonality anſwer to a line or ſurface; let the ſubſtances it is predicated of, like the infinite variety of ſolids in nature, (with their appendages, heat, cold, colour, &c.) in which length and breadth are found, vary as you pleaſe; ſtill the abſtract ideas of line and ſurface, and therefore of perſon, will remain invariable. And thus propoſitions formed out of theſe general ideas contain certain truths, that are in one ſenſe eternal and immutable, as depending on no precarious exiſtences whatever. Being merely what we ourſelves make them, they muſt continue the ſame while the ſame number of ſuch ideas continue joined together, and appear the ſame to every intelligent being that contemplates them *. They do not ſtand in need (I ſay) of an objective reality, or the exiſtence of any external things in full conformity to them, ſince we here conſider things no farther than as coming up to theſe original ſtandards, ſettled in the minds of men; or as capable of being included in ſuch meaſures as are applied to determine their preciſe quantity, quality, &c. we are ranking them under a certain ſpecies or ſort, hence called their eſſence, which entitles them to the name deſcriptive of it, as is ſufficiently explained by Mr. Locke. They want therefore nothing more to eſtabliſh their reality, than to be conſiſtently put together, ſo as may diſtinguiſh them from others that are merely chimerical, and qualify them for the admiſſion of any real beings that may occur: Thus, not only the inſtance of a triangle ſo frequently uſed by Mr. Locke, but every theorem in Euclid, may be ranked among the abſtract conſiderations of quantity, apart from all real exiſtence, which ſeldom comes up to it: As it may be juſtly queſtioned whether any triangle or circle, as defined by him, ever exiſted in nature, i. e. exiſted ſo that all the lines of the triangle were right ones, or all the lines drawn from the centre to the circumference equal. Theſe ideas preſuppoſe † no one being in particular, they imply nothing more than a proper ſubject of in-

* See the firſt note to A. B. King's Origin of Evil.
† Vide Bp. Butler's Diſſ. on Perſonal Identity.

quiry

quiry (as was ſaid above) or ſome ſuch creature as is either actually endowed with, or at leaſt ſuſceptible of theſe ſpecific qualities, or modes, which furniſh matter for the whole tribe of abſtractions daily made and preſerved by ſuch terms as uſually ſerve to denote them; whether appellatives, in order to diſtinguiſh men in their ſeveral ſtations and relations, private or public; to deſcribe their character or conduct, office, &c. as parent, patriot, king, &c. or ſuch more general, technical ones, as paternity, patriotiſm, kingſhip, &c. the nature, end, and uſe, of all which abſtractions, with their names, are well enough underſtood, and would not eaſily be miſtaken in affairs of common life, which are happily leſs liable to ſuch kind of ſubtile refinements, as have brought metaphyſical ſpeculations into that contempt under which they have long laboured. In ſhort, of theſe ſame abſtractions conſiſt all general terms and theorems of every ſcience; and the truth and certainty contained in them, when applied to morals or theology, is no leſs determinate than in other ſciences; it is equally capable of ſtrict demonſtration, as Mr. Locke obſerves, and equally applicable to full as uſeful and important purpoſes: The great general truths, I ſay, ariſing out of theſe general eſſences, or entities, (as they are ſometimes called) are all clear, conſtant, and invariable in themſelves, though the names in which ſuch a collection of ideas ſhould be preſerved, are often through the poverty and imperfection of language rendered extremely vague and uncertain in each writer or ſpeaker, and the ideas formed by them in other men's minds (which are their proper archetypes, and a conformity to which alone makes them right or wrong, truly or untruly applied) thereby become no leſs frequently confuſed and indeterminate. Thus, in the caſe before us, the word perſon is often uſed to ſignify the whole aggregate of a rational being, including both the very imperfect idea, if it be any idea at all, of ſubſtance, and its ſeveral properties, [as is the common way] or taking all the eſſential qualities together, [which properly conſtitute the ſubſtance of any thing *] with ſeveral of their modes.

* See the firſt note to King, and the authors there cited.

As when ſpeaking of any one, we include ſoul, body, ſtation, and other circumſtances, and accordingly ſtyle him a wiſe, worthy perſon; a tall, comely; a rich, great one, &c. where perſon in a lax, popular ſenſe ſignifies as much as man. In which popular ſenſe Mr. Locke manifeſtly takes the word, when he ſays, it "ſtands for "a thinking intelligent being, that has reaſon and re-"flection, and can conſider itſelf as itſelf, the ſame "thinking being, in different times and places." B. 2. C. 27. §. 9. But when the term is uſed more accurately and philoſophically, it ſtands for one eſpecial property of that thing or being, ſeparated from all the reſt that do or may attend it in real exiſtence, and ſet apart for ranging ſuch beings into diſtinct claſſes, (as hinted above) and conſidering them under diſtinct relations and connexions, which are no leſs neceſſary to be determined in life, and which ſhould therefore have their proper and peculiar denomination. And thus ſameneſs of perſon ſtands to denote, not what conſtitutes the ſame rational agent, though it always is predicated of ſuch; but we conſider his rationality ſo far only, as it makes him capable of knowing what he does and ſuffers, and on what account, and thereby renders him amenable to juſtice for his behaviour, as above-mentioned.

Whatever ingredients therefore of different kinds go to the compoſition, what other particulars, whether mental or corporeal, contribute to the formation of this intelligent being, theſe make no part of our inquiry; which, I beg leave to repeat it again, is not what enters into the natural conſtitution of a thing, but what renders it ſo far a moral one, and is the ſine quâ non of its being juſtly chargeable with any of its paſt actions, here or hereafter: Or, in other words, it does not affect the reality or the permanency of ſuch intelligent beings, but only regulates and retains thoſe beings under ſuch a moral relation, as makes them properly accountable to ſome ſuperior for their courſe of action. It is an artificial diſtinction, yet founded in the nature, but not the whole nature of man, who muſt have many other eſſential powers and properties to ſubſiſt as man, and even to ſupport this in queſtion; but none other, we ſay, that

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can affect, or in any wiſe alter his condition in the above-named reſpect, and therefore none that come with propriety into the preſent conſideration.

This is all the myſtery of the matter, which has puzzled ſo many ingenious writers, and been ſo marvellouſly miſtaken by ſuch as are not ſufficiently acquainted with the doctrine of abſtractions, or are miſled by terms of art, inſtead of attending to the preciſe ideas which theſe ought to convey, and would always convey if they were but carefully and ſteadily applied; for want of which proper application, men of genius and good ſenſe have fallen into ſuch egregious trifling *, as ſerves only to diſturb this beyond moſt other parts of ſcience, and has filled the above celebrated queſtion with a multitude of quibbles, which Mr. Locke's clear and copious anſwers to his ſeveral opponents might, one would have hoped, have moſt effectually prevented; but which are ſubſiſting to this very day, to the no ſmall mortification of all ſincere lovers of truth, and admirers of that able defender of it. And I have been the larger on this head of general words and notions, which have ſo cloſe a con-

* An extraordinary inſtance of this kind is to be met with in Biſhop Berkeley, which he calls a demonſtration of the point; where the ſuppoſed union of A and C, not with the whole of B, but with ſome different parts of which B conſiſts, will hardly make them one with each other:——But this famous demonſtration may be ranked among ſome others of the ſame ſort, and ſafely truſted with the reader: 'Let us ſuppoſe that a perſon hath ideas, and is conſcious during a certain ſpace of time, which we will divide into three equal parts, whereof the latter terms are marked by the letters A, B, C. In the firſt part of time the perſon gets a certain number of ideas, which are retained in A: during the ſecond part of time he retains one half of his old ideas, and loſeth the other half, in place of which he acquires as many new ones: ſo that in B his ideas are half old and half new. And in the third part we ſuppoſe him to loſe the remainder of the ideas acquired in the firſt, and to get new ones in their ſtead, which are retained in C, together with thoſe acquired in the ſecond part of time.—The perſons in A and B are the ſame, being conſcious of common ideas by the ſuppoſition. The perſon in B is (for the ſame reaſon) one and the ſame with the perſon in C. Therefore the perſon in A is the ſame with the perſon in C, by that undoubted axiom, quæ conveniunt uni tertio conveniunt inter ſe. But the perſon in C hath no idea in common with the perſon in A. Therefore perſonal identity doth not conſiſt in conſciouſneſs.' Alciphron, v. 2. p. 160.

nexion with each other, and with the preſent queſtion, as the ſubject perhaps is not ſufficiently explained by Mr. Locke in any one place of his admirable eſſay, though it occurs pretty often; and ſince the ſeveral properties or attributes of theſe ſame abſtract ideas are ſtill ſo miſerably miſunderſtood, as to have their very exiſtence diſputed, probably becauſe he has been pleaſed to ſet it forth in a manner ſomewhat paradoxical. Though this word exiſtence alſo is a term often miſapplied, as if nothing could really exiſt which was not an object of the ſenſes: Whereas in theſe, and ſeveral other ideas, as has been often obſerved, their eſſe is percipi.

Again, We are often miſled on the other hand by imagining what things are in themſelves (as we uſually term it) or in their internal eſſences; inſtead of conſidering them as they appear, and ſtand related to us; or according to the ideas that are obviouſly ſuggeſted by them; which ideas only ſhould be the objects of our contemplation, (ſince we really perceive nothing elſe) and ought always to regulate our inquiry into things, as theſe are the ſole foundation of all our knowledge concerning them, of all that can with ſafety direct, or be of ſervice to us.

But to return to our author. That property then, or quality, or whatever he chooſes to call it, which, in his own words, renders men "ſenſible that they are the ſame" in ſome reſpects, is in Mr. Locke's ſenſe, in the legal, and in common ſenſe, that which ſo far makes them ſuch, or brings them into the ſame relative capacity of being ranked among moral, ſocial creatures, and of being treated accordingly, for ſeveral obvious purpoſes in ſocial life. This conſciouſneſs, I ſay, of being thus far ourſelves, is what, in Mr. Locke's language, makes us ſo. In this caſe, as in ſome other ideal objects, to be, and be perceived, is really the ſame, and what this author calls the ſign, coincides with the thing ſignified. Whether any intelligent being is at preſent what he is in every reſpect, wants no proof; of this he has ſelf-evident intuitive knowledge *, and can go no higher. And whether he now is what he was once be-

* See note 10. to King. Rem. a.

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fore, in this ſingle article of perſonality, can only be determined by his now being ſenſible of what he then thought and did; which is equally ſelf-evident; and thus again, conſciouſneſs at the ſame time, and by the ſame means, that it convinces him of this, does likewiſe conſtitute him ſuch to all ends and purpoſes whatſoever.

Well then, having examined a little into the nature, and enumerated ſome few properties of an abſtract idea in general, and ſhown that this particular one before us can be nothing more, we may find perhaps that however fluctuating and changeful this account may be judged to render perſonality; how much ſoever it may fall ſhort of ſome ſublime ſyſtems about purely immaterial ſubſtances, and perfectly independent principles of thought; yet there is no help for theſe changes in the ſeat of perſonality; ſince, in the laſt place, we know of nothing more ſtable and permanent in our conſtitution that has the leaſt pretence to ſettle and ſupport it. All parts of the body are to a certain degree in perpetual flux, nor is any one of them, that we are acquainted with, concerned in the preſent caſe more than another. As to the mind, both its cogitative and active powers are ſuſpended (whether they be ſo or not is a matter of fact, in which experience only, and not ſubtile argumentations drawn from the nature of an unknown, perhaps imaginary, eſſence ought to decide) during ſound ſleep: Nay, every drowſy nod (as Mr. Locke expreſſes it) muſt ſhake their doctrine, who maintain that theſe powers are inceſſantly employed. Call then a reſuſcitation or revival of theſe powers, when we awake, another beginning of their exiſtence, a new creation; and argue againſt the poſſibility of any ſuch interruption or annihilation of them, as long as you pleaſe; yet that it is matter of fact, and nightly experience, and capable of as good proof as a negative propoſition will admit, is made out ſufficiently by the above-named excellent writer. This, if properly attended to, and purſued through its genuine conſequences, would go a great way towards unfolding the true nature of the human mind, which many thoughtful men ſeem yet very little acquainted

quainted with, and very much afraid to examine *. And while this diſpoſition holds, we can never expect to come at the original core of all thoſe corruptions that have infected this branch of philoſophy, and extended

* Will not the leaſt hint of this doctrine, ſay they, give great offence, by appearing to undermine the ſettled diſtinction between ſoul and body, which is ſo much countenanced and confirmed in ſcripture?—Does it not tend to diſturb common apprehenſions, and confound both the ſenſe and language of mankind?

Anſw. 1. If this doctrine be true, and a truth of ſome importance, it will ſurely ſtand the teſt, and ought to be ſupported, againſt all ſuch inconcluſive argumentations as are drawn from conſequences, and common prejudices, and can only ſerve to obſtruct all kinds of improvement in any ſcience whatſoever.

Anſw. 2. The two great conſtituents of our frame frequently alluded to in ſcripture, and to which [as to other popular notions and received forms of expreſſion] it uſually accommodates itſelf, are here no more confounded, than when St. Paul introduces a third as no leſs eſſential to the whole of our compoſition: "I pray God your whole ſpirit, and ſoul, "and body, be preſerved blameleſs unto the coming of our Lord Jeſus "Chriſt." 1 Theſſ. v. 23.

So far is either the true ſenſe of ſcripture, or the real nature of things, from being confined to the logical arrangement of them under their eſtabliſhed genera or ſpecies; ſo little concerned either in our phyſical or metaphyſical diſtinctions of them, v. g. into animal and vegetable, material and immaterial, ſubſtance and property, &c. nor is its language more confounded, or its authority ſhaken, by ſuch a new ſyſtem of pneumatology, than it was by the late one of Copernicus concerning each of the planetary motions; which proved, that ſtrictly and philoſophically ſpeaking neither does the ſun riſe, nor the earth ſtand upon pillars, &c. or by Newton's principles of gravity and vacuum (for whoſe ſuppoſed innovations his French commentators lately thought themſelves ſtill obliged to enter their caveat, and make apology to the church;) or Locke's more hardy doctrine of "no innate ideas:" of which this doctrine of ours is a neceſſary conſequence; ſince if the mind was once a mere raſa tabula, it will ſoon appear not only from whence it received all its furniture, but alſo where that is lodged. (See Eſq. Search's account of what he terms the mind's internal organs. Light of Nat. purſued, c. 7. 8.) all which were once equally dangerous and offenſive poſitions; but would ſuch ſurmiſes, as have been advanced about them, be admitted in any other caſe? would even a Romiſh, or any other inquiſition now be found weak or wicked enough to proceed upon them? and if at laſt an author ſhall incur the odium theologicum, and be traduced by the name of ſadducee, ſocinian, ſemipagan, &c. for his innocent, as he thinks, perhaps laudable intentions;—if offence will be taken, as it often happens, where no juſt cauſe of offence is given; he muſt patiently ſubmit to his hard fate, and only beg leave to inquire whether there be not ſome room for ſuſpending our judgment awhile, 'till it more fully appears where the fault of all this chiefly lies, and who is really anſwerable for it.

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themſelves to ſome other parts of ſcience. Nor are the ſeveral proofs, or, if you pleaſe, probabilities, that I was not thinking all the laſt night, ſufficiently anſwered by the old excuſe that I may forget all ſuch thoughts immediately as ſoon as ever I awake: for ſetting aſide the great improbability of this happening ſo very conſtantly, for ſo long a time, it muſt appear to any one who underſtands what he ſays, that whoſoever, or whatſoever, was thus employed, it could not poſſibly be I who was all this while buſily engaged in ſuch thoughts, ſince they never bore the leaſt ſhare in my ſeries of conſciouſneſs, never were connected with the chain of my waking thoughts, nor therefore could any more belong to me, than if you ſuppoſe them (as you might full as well, for argument's ſake, and to ſalve an hypotheſis) to be the working of ſome ſecret mechaniſm, or kept up in the watch that was lying by me. Something like this, I preſume, would be the plea, which all the advocates for this lame ſyſtem would offer in their own defence, were any one ſo injurious as to charge them with things done or ſaid in their ſleep. The ſame obſervation may be urged againſt that abſurd, ſelf-repugnant hypotheſis of our having been in a pre-exiſtent ſtate: for whatſoever was done there, it can be nothing to us, who had never the leaſt notice or conception of it.

To the difficulties ſo often objected, of this being a "new creation," and making the ſame thing have "two beginnings of exiſtence;"—We may obſerve, that it would indeed be an abſurdity to ſuppoſe two beginnings of exiſtence, if the identity of a ſubſtance, being, or man were inquired into; but when the inquiry is made into the artificial abſtract idea of perſonality, invented for a particular end, to anſwer which conſciouſneſs only is required, beginning and end of exiſtence are quite out of the queſtion, being foreign to any conſideration of the ſubject.—It may be farther obſerved, that in fact we meet with ſomething of the ſame kind every morning after a total interruption of thought (and I hope, we may by this time in one ſenſe be allowed to term it ſo) during ſound ſleep: nay, if we ſearch the thing narrowly, and may in our turn enter into ſuch minutiæ,

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thus much will be implied in the ſucceſſive train of our ideas, even in each hour of the day; that ſame article of ſucceſſion including ſome degree of diſtance between each of them, and conſequently at every ſucceſſive ſtep there is a new production, which may with equal reaſon be ſtyled an interruption of thought, or a new exertion of the thinking power.—But enough of theſe nugæ difficiles. Such changeable, frail creatures then are we through life; yet ſafe in the hand of that unchangeably juſt, wiſe, good, and all-powerful Being, who perfectly underſtands our frame, and will make due allowances for each defect or diſorder incident to it; who at firſt created us out of nothing, and ſtill preſerves us through each ſhifting ſcene, be the revolutions in it never ſo frequent and rapid, and will at length moſt aſſuredly conduct us to immortality. Though in every reſpect we are here "fleeing as it were a ſhadow, and "never continuing in one ſtay," and at laſt ſuffer a ſhort ſeeming pauſe * in our exiſtence, which is in ſcripture termed the "ſleep of death;" yet will he again raiſe us "out of the duſt;" reſtore us to ourſelves, and to our friends †; revive our conſciouſneſs of each paſt act or habit, that may prove of the leaſt moral import; cauſe the "ſecrets of all hearts to be laid open," and

* i. e. a pauſe in the opinion and ſight of other ſentient beings exiſting after our departure, but not a pauſe ſtrictly ſo called to the perſon himſelf, in which there will be an unbroken thread of conſciouſneſs or continued perſonality; time unperceived being no time, time abſolute a fiction, and no idea intervening between the moments of his falling aſleep and waking again, theſe will be to him coincident: which ſhows, that perſonality cannot have two beginnings of exiſtence, though the ſubſtance in which it is found may be perpetually varied, and though ſometimes a leſs number of facts riſe up to his remembrance.

† To one who has not ſeen and felt the unhappy effects of human prejudice and partial judgment in ſuch caſes, it might appear ſtrange that ſo many wiſe and able men ſhould ſtill continue ignorant of this, after all the fulleſt information given us in the following expreſs declaration of that great and good apoſtle St. Paul: "I would not have you to be igno-"rant, brethren, concerning them which are aſleep, that ye ſorrow not "even as others which have no hope. For if we believe that Jeſus died "and roſe again, even ſo them alſo which ſleep in Jeſus, will God bring "with him. — Wherefore comfort one another with theſe words." 1 Theſſ. iv. 13, &c.

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either reward or puniſh every one according to his works done in the body.

Nor does it imply a plurality of perſons in any man at any time given to charge him with various actions or omiſſions; ſince he may become guilty of a plurality of crimes, as often as he is induced or enabled to reflect upon them, though theſe cannot be crowded into his mind altogether, any more than they could have been ſo committed. Nor therefore need all paſt actions become at once preſent to the mind; which is utterly inconſiſtent with our frame, as it now ſtands, and perhaps with that of every other created being; nor is there a neceſſity for any one idea being always actually in view; which is equally ſo; but only for a capacity of having ſuch brought to mind again, together with a conſciouſneſs of their having been there before, (which diſtinguiſhes them from entirely new ones,) or a poſſibility of recognizing them upon occaſion, at leaſt whenever we are to account for them, as has been frequently obſerved. So far as any ſuch recognition reaches, ſuch perſon is the ſame; when this faculty varies, that muſt vary alſo; and he become the ſame, or not, at different times and in divers reſpects, as obſerved likewiſe; at leaſt his accountableneſs muſt vary in proportion, call this perſonality, or what you think fit. Nor does it properly lie in a power of cauſing a return of the ſame idea; but rather in the capacity of receiving it, of re-admitting the ſame conſciouſneſs concerning any paſt thought, action, or perception. Nor is it merely a preſent repreſentation of any ſuch act; but a repreſentation of it as our own, which entitles us to it; one perſon may know or become conſcious of the deeds of another, but this is not knowing that he himſelf was the author of thoſe deeds, which is a contradiction; and to treat him as ſuch upon that account only, would be inverting all rules of right and wrong; and could not therefore be practiſed by either God or man, ſince no end could poſſibly be anſwered by ſuch treatment, as obſerved above.

To dwell upon thoſe ſurpriſing conſequences that might attend the transferring the ſame conſciouſneſs to different beings, or giving the ſame being very different ones, is merely puzzling and perplexing the point,

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by introducing ſuch confuſions as never really exiſted, and would not alter the true ſtate of the queſtion, if they did.

Such Fairy tales and Arabian transformations, poſſible or impoſſible, can only ſerve to amuſe the fancy, without any ſolid information to the judgment. Theſe flights of mere imagination Mr. Locke generally avoids, though he was here tempted to indulge a few ſuch, in playing with the wild ſuppoſitions of his adverſaries, [v. g. a change of ſouls between Socrates and the mayor of Queenborough, &c.] probably to enliven a dry ſubject, and render it more palatable to the bulk of his readers.

Nor are thoſe caſes of a diſordered imagination in lunacy, or vapours, where perſons are for a time beſide themſelves (as we uſually term it) and may believe ſuch chimerical alterations to befal them, any more to the purpoſe.

But it were endleſs to unravel all the futile ſophiſms and falſe ſuppoſitions, that have been introduced into the preſent queſtion; I have endeavoured to obviate ſuch as appeared moſt material, and account for them; and at the ſame time to inculcate a doctrine, which, though common enough, ſeemed not enough attended to; yet is fundamentally requiſite to a right underſtanding of this intricate ſubject. And if that which is laid down above be a true ſtate of the caſe, all the reſt of our author's plan, [of placing perſonal identity in a continuation of thought *] will drop of courſe. I truſt the reader will make allowance for ſome repetitions, which were left to render things as plain as poſſible, and prevent future ſubterfuges of the like kind; and if the ſubſtance of theſe few haſty obſervations on the firſt part of this ingenious writer's eſſay, prove in the leaſt degree ſatisfactory to himſelf, or have a tendency to enlarge general knowledge, and guard againſt popular errours, I muſt rely upon his candour for excuſing the manner in

* Which diſpoſition, could it be made out, would never anſwer the intent of ſociety, or help to direct us in our duty, the two grand objects which firſt gave birth to perſonality; i. e. to a very partial confined conſideration of that complex idea, ſubſtance, or being, called man.

which they are thrown out; and ſhall take the liberty of cloſing them in the form of a ſyllogiſm, which is ſubmitted to his conſideration:

Quo poſito ponitur perſonæ identitas, et quo ſublato tollitur, id perſonalem identitatem conſtituit:

Sed poſitâ conſcientiâ, &c.

Ergo.

APPENDIX.

A friend, well acquainted with the ſubject of the foregoing ſheets, having communicated to me ſome obſervations concerning the uſe of the word Perſon, which came too late to be inſerted in their proper place, I muſt take the liberty of annexing them, though they occaſion ſome more redundancies and repetitions, in order to throw as much light as is poſſible on this very obſcure and long controverted queſtion.

AS Mr. Locke's definition of the term perſon, (chap. xxvii. §. 9.) may poſſibly create ſome difficulty, it will be proper to examine into the ſenſe which ſhould be put upon this word, whenever we inquire after the identity of any man's perſon; which may perhaps at once lead us to a juſt conception of the whole. In the aforementioned ſection, Mr. Locke ſays, that perſon ſtands for "a thinking intelligent being, that has reaſon and reflection," &c. whereas I ſhould imagine, the expreſſion would have been more juſt, had he ſaid that the word perſon ſtands for an attribute, or quality, or character of a thinking intelligent being; in the ſame ſenſe as Tully uſes it, Orat. pro Syll. §. 3. "Hanc mihi tu "ſi, propter res meas geſtas, imponis in omni vitâ meâ "perſonam, Torquate, vehementer erras. Me natura "miſericordem, patria ſeverum; crudelem nec patria, "nec natura eſſe voluit: denique iſtam ipſam perſonam "vehementem et acrem, quam mihi tum tempus et "reſpublica impoſuit, jam voluntas et natura ipſa de-"traxit." It came at laſt to be confounded with, and ſtand for homo gerens perſonam, (Taylor, Civ. L. p. 247, 248.) and in this ſenſe Locke has incautiouſly defined the word. It is attributed alſo to more intelligent beings

beings than one; as by the jeſuits in their declaration prefixed to the third book of Newton, alienam coacti ſumus gerere perſonam. The word perſon then, according to the received ſenſe in all claſſical authors, ſtanding for a certain guiſe, character, quality, i. e. being in fact a mixed mode, or relation, and not a ſubſtance; we muſt next inquire, what particular character or quality it ſtands for in this place, as the ſame man may bear many characters and relations at the ſame, or different times. The anſwer is, that here it ſtands for that particular quality or character, under which a man is conſidered, when he is treated as an intelligent being ſubject to government and laws, and accountable for his actions: i. e. not the man himſelf, but an abſtract conſideration of him, for ſuch and ſuch particular ends: and to inquire after its identity is to inquire, not after the identity of a conſcious being, but after the identity of a quality or attribute of ſuch a conſcious being. All difficulties that relate to a man's forgetting ſome actions, &c. now vaniſh, when perſon is conſidered as a character, and not a ſubſtance, or confounded with homo gerens perſonam: and it amounts to no more than ſaying, a man puts on a maſk—continuing to wear it for ſome time—puts off one maſk and takes another, i. e. appears to have conſciouſneſs—to recollect paſt conſciouſneſſes —does not recollect them, &c. The impropriety conſiſts in ſaying, a man is the ſame perſon with him who did ſuch a fact; which is the ſame as to ſay, a man is blackneſs, guilt, &c. i. e. a mixed mode is predicated of a ſubſtance; whereas it ought to be, in ſtrict propriety of ſpeech, the perſon of the man who did ſuch a fact, is the ſame with the perſon of him, who now ſtands before us; or, in plainer terms, the man who now ſtands before the court is conſcious of the former facts, and is therefore the proper object of puniſhment. It may be obſerved, that the word perſonality is really an abſurd expreſſion: ſince perſon itſelf ſtands for the mixed mode or quality;—and perſonality therefore may be ranked among the old ſcholaſtic terms of corporeity, egoity, tableity, &c. or is even yet more harſh; as mixed modes, ſuch as gratitude, murder, and therefore perſon, cannot be thus re-modified without peculiar abſurdity.

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Quid tam temerarium tamque indignum ſapientis gravitate atque conſtantiâ, quam aut falſum ſentire, aut quod non ſatis exploratè perceptum ſit, & cognitum, ſine ullâ dubitatione defendere?

Cic. de Natura Deorum, lib. 1.

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§. 1. THE laſt reſort a man has recourſe to, in the conduct of himſelf, is his underſtanding: for though we diſtinguiſh the faculties of the mind, and give the ſupreme command to the will, as to an agent; yet the truth is, the man, who is the agent, determines himſelf to this, or that, voluntary action, upon ſome precedent knowledge, or appearance of knowledge in the underſtanding. No man ever ſets himſelf about any thing, but upon ſome view, or other, which ſerves him for a reaſon for what he does: and whatſoever faculties he employs, the underſtanding, with ſuch light as it has, well or ill informed, conſtantly leads; and by that light, true or falſe, all his operative powers are directed. The will itſelf, how abſolute and uncontrollable ſoever it may be thought, never fails in its obedience to the dictates of the underſtanding. Temples have their ſacred images, and Introduction.

and we see what influence they have always had over a great part of mankind. But, in truth, the ideas and images in men's minds are the invisible powers, that constantly govern them; and to these they all universally pay a ready submission. It is, therefore, of the highest concernment, that great care should be taken of the understanding, to conduct it right, in the search of knowledge, and in the judgments it makes.

The logic, now in use, has so long possessed the chair, as the only art taught in the schools, for the direction of the mind, in the study of the arts and sciences, that it would perhaps be thought an affectation of novelty to suspect, that rules, that have served the learned world these two or three thousand years, and which, without any complaint of defects, the learned have rested in, are not sufficient to guide the understanding. And I should not doubt, but this attempt would be censured as vanity, or presumption, did not the great lord Verulam's authority justify it; who, not servilely thinking learning could not be advanced beyond what it was, because for many ages it had not been, did not rest in the lazy approbation and applause of what was, because it was; but enlarged his mind to what it might be. In his preface to his Novum Organum, concerning logic, he pronounces thus, "Qui summas dialecticæ partes tribue-
"runt, atque inde fidissima scientiis præsidia comparari
"putârunt, verissimè et optimè viderunt intellectum
"humanum, sibi permissum, meritò suspectum esse de-
"bere. Verum infirmior omninò est malo medicina;
"nec ipsa mali expers. Siquidem dialectica, quæ re-
"cepta est, licet ad civilia et artes, quæ in sermone et
"opinione positæ sunt, rectissimè adhibeatur; naturæ
"tamen subtilitatem longo intervallo non attingit, et
"prensando quod non capit, ad errores potius stabili-
"endos et quasi figendos, quam ad viam veritati aperi-
"endam valuit."

"They, says he, who attributed so much to logic,
"perceived very well and truly, that it was not safe to
"trust the understanding to itself without the guard of
"any rules. But the remedy reached not the evil, but
"became a part of it: for the logic, which took place,

though

" though it might do well enough in civil affairs, and " the arts, which consisted in talk and opinion; yet " comes very far short of subtlety, in the real perfor- " mances of nature; and, catching at what it cannot " reach, has served to confirm and establish errours, " rather than to open a way to truth." And therefore a little after he says, " That it is absolutely necessary, " that a better and perfecter use and employment of the " mind and understanding should be introduced." " Necessariò requiritur ut melior et perfectior mentis et " intellectûs humani usus et adoperatio introducatur."

Parts.

§. 2. There is, it is visible, great variety in men's understandings, and their natural constitutions put so wide a difference between some men, in this respect, that art and industry would never be able to master; and their very natures seem to want a foundation to raise on it that which other men easily attain unto.—Amongst men of equal education there is great inequality of parts. And the woods of America, as well as the schools of Athens, produce men of several abilities in the same kind. Though this be so, yet I imagine most men come very short of what they might attain unto, in their several degrees, by a neglect of their understandings. A few rules of logic are thought sufficient, in this case, for those who pretend to the highest improvement; whereas I think there are a great many natural defects in the understanding, capable of amendment; which are overlooked and wholly neglected. And it is easy to perceive, that men are guilty of a great many faults, in the exercise and improvement of this faculty of the mind, which hinder them in their progress, and keep them in ignorance and errour all their lives. Some of them I shall take notice of, and endeavour to point out proper remedies for, in the following discourse,

Reasoning.

§. 3. Besides the want of determined ideas, and of sagacity, and exercise in finding out, and laying in order, intermediate ideas; there are three miscarriages, that men are guilty of, in reference to their reason, whereby this faculty is hindered in them from that service it might do, and was designed for.

And he, that reflects upon the actions and discourses of mankind, will find their defects in this kind very frequent, and very observable.

1. The first is of those who seldom reason at all, but do and think according to the example of others, whether parents, neighbours, ministers, or who else they are pleased to make choice of to have an implicit faith in, for the saving of themselves the pains and trouble of thinking and examining for themselves.

2. The second is of those who put passion in the place of reason, and, being resolved that shall govern their actions and arguments, neither use their own, nor hearken to other people's reason, any farther than it suits their humour, interest, or party; and these one may observe commonly content themselves with words, which have no distinct ideas to them, though, in other matters, that they come with an unbiassed indifferency to, they want not abilities to talk and hear reason, where they have no secret inclination, that hinders them from being intractable to it.

3. The third sort is of those who readily and sincerely follow reason; but, for want of having that, which one may call large, sound, round-about sense, have not a full view of all that relates to the question, and may be of moment to decide it. We are all short-sighted, and very often see but one side of a matter; our views are not extended to all that has a connexion with it. From this defect I think no man is free. We see but in part, and we know but in part, and therefore it is no wonder we conclude not right from our partial views. This might instruct the proudest esteemer of his own parts, how useful it is to talk and consult with others, even such as come short of him in capacity, quickness, and penetration: for, since no one sees all, and we generally have different prospects of the same thing, according to our different, as I may say, positions to it; it is not incongruous to think, nor beneath any man to try, whether another may not have notions of things, which have escaped him, and which his reason would make use of, if they came into his mind. The faculty of reasoning seldom or never deceives those who trust to it; its consequences,

sequences, from what it builds on, are evident and certain; but that, which it oftenest, if not only, misleads us in, is, that the principles from which we conclude, the grounds upon which we bottom our reasoning, are but a part, something is left out, which should go into the reckoning, to make it just and exact. Here we may imagine a vast and almost infinite advantage, that angels and separate spirits may have over us; who, in their several degrees of elevation above us, may be endowed with more comprehensive faculties: and some of them, perhaps, having perfect and exact views of all finite beings, that come under their consideration, can, as it were, in the twinkling of an eye, collect together all their scattered and almost boundless relations. A mind so furnished, what reason has it to acquiesce in the certainty of its conclusions!

In this we may see the reason, why some men of study and thought, that reason right, and are lovers of truth, do make no great advances in their discoveries of it. Errour and truth are uncertainly blended in their minds; their decisions are lame and defective, and they are very often mistaken in their judgments: the reason whereof is, they converse but with one sort of men, they read but one sort of books, they will not come in the hearing but of one sort of notions: the truth is, they canton out to themselves a little Goshen, in the intellectual world, where light shines, and, as they conclude, day blesses them; but the rest of that vast expansum they give up to night and darkness, and so avoid coming near it. They have a pretty traffic with known correspondents, in some little creek; within that they confine themselves, and are dexterous managers enough of the wares and products of that corner, with which they content themselves, but will not venture out into the great ocean of knowledge, to survey the riches that nature hath stored other parts with, no less genuine, no less solid, no less useful, than what has fallen to their lot, in the admired plenty and sufficiency of their own little spot, which to them contains whatsoever is good in the universe. Those who live thus mewed up, within their own contracted territories, and will not look abroad

beyond the boundaries that chance, conceit, or lazineſs, has ſet to their inquiries; but live ſeparate from the notions, diſcourſes, and attainments of the reſt of mankind; may not amiſs be repreſented by the inhabitants of the Marian iſlands; who, being ſeparated, by a large tract of ſea, from all communion with the habitable parts of the earth, thought themſelves the only people of the world. And though the ſtraitneſs of the conveniencies of life amongſt them, had never reached ſo far as to the uſe of fire, till the Spaniards, not many years ſince, in their voyages from Acapulco to Manilla, brought it amongſt them; yet, in the want and ignorance of almoſt all things, they looked upon themſelves, even after that the Spaniards had brought, amongſt them, the notice of variety of nations, abounding in ſciences, arts, and conveniencies of life, of which they knew nothing; they looked upon themſelves, I ſay, as the happieſt and wiſeſt people of the univerſe. But, for all that, nobody, I think, will imagine them deep naturaliſts, or ſolid metaphyſicians; nobody will deem the quickeſt-ſighted amongſt them to have very enlarged views in ethics, or politics; nor can any one allow the moſt capable amongſt them to be advanced ſo far in his underſtanding, as to have any other knowledge, but of the few little things of his and the neigbouring iſlands, within his commerce; but far enough from that comprehenſive enlargement of mind, which adorns a ſoul devoted to truth, aſſiſted with letters, and a free generation of the ſeveral views and ſentiments of thinking men of all ſides. Let not men, therefore, that would have a ſight of what every one pretends to be deſirous to have a ſight of, truth in its full extent, narrow and blind their own proſpect. Let not men think there is no truth, but in the ſciences that they ſtudy, or books that they read. To prejudge other men's notions, before we have looked into them, is not to ſhow their darkneſs, but to put out our own eyes. "Try all things, hold faſt that which is good," is a divine rule, coming from the Father of light and truth; and it is hard to know, what other way men can come at truth, to lay hold of it, if they do not dig and ſearch for it as for

gold and hid treasure; but he that does so, must have much earth and rubbish, before he gets the pure metal; sand, and pebbles, and dross usually lie blended with it, but the gold is never the less gold, and will enrich the man that employs his pains to seek and separate it. Neither is there any danger he should be deceived by the mixture. Every man carries about him a touch-stone, if he will make use of it, to distinguish substantial gold from superficial glitterings, truth from appearances. And, indeed, the use and benefit of this touch-stone, which is natural reason, is spoiled and lost only by assumed prejudices, overweening presumption, and narrowing our minds. The want of exercising it, in the full extent of things intelligible, is that which weakens and extinguishes this noble faculty in us. Trace it, and see whether it be not so. The day-labourer in a country-village has commonly but a small pittance of knowledge, because his ideas and notions have been confined to the narrow bounds of a poor conversation and employment: the low mechanic of a country-town does somewhat out-do him: porters and coblers of great cities surpass them. A country gentleman who, leaving Latin and learning in the university, removes thence to his mansion-house, and associates with neighbours of the same strain, who relish nothing but hunting and a bottle; with those alone he spends his time, with those alone he converses, and can away with no company, whose discourse goes beyond what claret and dissoluteness inspire. Such a patriot, formed in this happy way of improvement, cannot fail, as we see, to give notable decisions upon the bench, at quarter-sessions, and eminent proofs of his skill in politics, when the strength of his purse and party have advanced him to a more conspicuous station. To such a one, truly, an ordinary coffee-house gleaner of the city is an arrant statesman, and as much superior to, as a man conversant about Whitehall and the court, is to an ordinary shop-keeper. To carry this a little farther: Here is one muffled up in the zeal and infallibility of his own sect, and will not touch a book, or enter into debate with a person that will question any of those things, which to him are sacred.

sacred. Another surveys our differences in religion with an equitable and fair indifference, and so finds, probably, that none of them are in every thing unexceptionable. These divisions and systems were made by men, and carry the mark of fallible on them; and in those, whom he differs from, and till he opened his eyes, had a general prejudice against, he meets with more to be said for a great many things, than before he was aware of, or could have imagined. Which of these two, now, is most likely to judge right, in our religious controversies, and to be most stored with truth, the mark all pretend to aim at? All these men, that I have instanced in, thus unequally furnished with truth, and advanced in knowledge, I suppose of equal natural parts; all the odds between them has been the different scope that has been given to their understandings to range in, for the gathering up of information, and furnishing their heads with ideas, and notions and observations, whereon to employ their mind, and form their understandings.

It will, possibly, be objected, "who is sufficient for all this?" I answer, more than can be imagined. Every one knows what his proper business is, and what, according to the character he makes of himself, the world may justly expect of him; and, to answer that, he will find he will have time and opportunity enough to furnish himself, if he will not deprive himself, by a narrowness of spirit, of those helps that are at hand. I do not say, to be a good geographer, that a man should visit every mountain, river, promontory, and creek, upon the face of the earth, view the buildings, and survey the land every where, as if he were going to make a purchase; but yet every one must allow that he shall know a country better, that makes often sallies into it, and traverses up and down, than he that, like a mill-horse, goes still round in the same track, or keeps within the narrow bounds of a field, or two, that delight him. He that will inquire out the best books, in every science, and inform himself of the most material authors of the several sects of philosophy and religion, will not find it an infinite work to acquaint himself with the sentiments of mankind, concerning the most weighty and comprehensive

hensive subjects. Let him exercise the freedom of his reason and understanding in such a latitude as this, and his mind will be strengthened, his capacity enlarged, his faculties improved; and the light, which the remote and scattered parts of truth will give to one another, will so assist his judgment, that he will seldom be widely out, or miss giving proof of a clear head, and a comprehensive knowledge. At least, this is the only way I know, to give the understanding its due improvement to the full extent of its capacity, and to distinguish the two most different things I know in the world, a logical chicaner from a man of reason. Only he, that would thus give the mind its flight, and send abroad his inquiries into all parts after truth, must be sure to settle in his head determined ideas of all that he employs his thoughts about, and never fail to judge himself, and judge unbiassedly, of all that he receives from others, either in their writings or discourses. Reverence, or prejudice, must not be suffered to give beauty, or deformity, to any of their opinions.

Of practice and habits.

§. 4. We are born with faculties and powers capable almost of any thing, such at least as would carry us farther than can easily be imagined: but it is only the exercise of those powers, which gives us ability and skill in any thing, and leads us towards perfection.

A middle-aged ploughman will scarce ever be brought to the carriage and language of a gentleman, though his body be as well proportioned, and his joints as supple, and his natural parts not any way inferior. The legs of a dancing-master, and the fingers of a musician, fall as it were naturally, without thought, or pains, into regular and admirable motions. Bid them change their parts, and they will in vain endeavour to produce like motions in the members not used to them, and it will require length of time and long practice to attain but some degrees of a like ability. What incredible and astonishing actions do we find rope-dancers and tumblers bring their bodies to! Not but that sundry, in almost all manual arts, are as wonderful; but I name those which the world takes notice of for such, because, on that very account,

account, they give money to ſee them. All theſe admired motions, beyond the reach and almoſt conception of unpractiſed ſpectators, are nothing but the mere effects of uſe and induſtry in men, whoſe bodies have nothing peculiar in them from thoſe of the amazed lookers-on.

As it is in the body, ſo it is in the mind; practice makes it what it is, and moſt even of thoſe excellencies, which are looked on as natural endowments, will be found, when examined into more narrowly, to be the product of exerciſe, and to be raiſed to that pitch, only by repeated actions. Some men are remarked for pleaſantneſs in raillery; others for apologues and appoſite diverting ſtories. This is apt to be taken for the effect of pure nature, and that the rather, becauſe it is not got by rules, and thoſe who excel in either of them, never purpoſely ſet themſelves to the ſtudy of it, as an art to be learnt. But yet it is true, that at firſt ſome lucky hit, which took with ſomebody, and gained him commendation, encouraged him to try again, inclined his thoughts and endeavours that way, till at laſt he inſenſibly got a facility in it, without perceiving how; and that is attributed wholly to nature, which was much more the effect of uſe and practice. I do not deny, that natural diſpoſition may often give the firſt riſe to it, but that never carries a man far, without uſe and exerciſe; and it is practice alone, that brings the powers of the mind, as well as thoſe of the body, to their perfection. Many a good poetic vein is buried under a trade, and never produces any thing for want of improvement. We ſee the ways of diſcourſe and reaſoning are very different, even concerning the ſame matter, at court and in the univerſity. And he that will go but from Weſtminſter-hall to the Exchange, will find a different genius and turn in their ways of talking; and yet one cannot think that all whoſe lot fell in the city, were born with different parts from thoſe who were bred at the univerſity, or inns of court.

To what purpoſe all this, but to ſhow that the difference, ſo obſervable in men's underſtandings and parts, does not ariſe ſo much from their natural faculties, as acquired

acquired habits. He would be laughed at, that ſhould go about to make a fine dancer out of a country hedger, at paſt fifty. And he will not have much better ſucceſs, who ſhall endeavour, at that age, to make a man reaſon well, or ſpeak handſomely, who has never been uſed to it, though you ſhould lay before him a collection of all the beſt precepts of logic or oratory. Nobody is made any thing by hearing of rules, or laying them up in his memory; practice muſt ſettle the habit of doing, without reflecting on the rule; and you may as well hope to make a good painter, or muſician, extempore, by a lecture and inſtruction in the arts of muſic and painting, as a coherent thinker, or a ſtrict reaſoner, by a ſet of rules, ſhowing him wherein right reaſoning conſiſts.

This being ſo, that defects and weakneſs in men's underſtandings, as well as other faculties, come from want of a right uſe of their own minds; I am apt to think, the fault is generally miſlaid upon nature, and there is often a complaint of want of parts, when the fault lies in want of a due improvement of them. We ſee men frequently dexterous and ſharp enough in making a bargain, who, if you reaſon with them about matters of religion, appear perfectly ſtupid.

Ideas.

§. 5. I will not here, in what relates to the right conduct and improvement of the underſtanding, repeat again the getting clear and determined ideas, and the employing our thoughts rather about them, than about ſounds put for them; nor of ſettling the ſignification of words, which we uſe with ourſelves, in the ſearch of truth, or with others, in diſcourſing about it. Thoſe hindrances of our underſtandings in the purſuit of knowledge I have ſufficiently enlarged upon, in another place; ſo that nothing more needs here to be ſaid of thoſe matters.

Principles.

§. 6. There is another fault, that ſtops, or miſleads, men in their knowledge, which I have alſo ſpoken ſomething of, but yet is neceſſary to mention here again, that we may examine it to the bottom, and ſee the root it ſprings from; and that is a cuſtom of taking up with principles that are not ſelf-evident, and very often not ſo much as true. It is not

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unusual to see men rest their opinions upon foundations that have no more certainty and solidity than the propositions built on them, and embraced for their sake. Such foundations are these and the like, viz.—the founders, or leaders, of my party are good men, and therefore their tenets are true;—it is the opinion of a sect that is erroneous, therefore it is false:—it hath been long received in the world, therefore it is true; or—it is new, and therefore false.

These, and many the like, which are by no means the measures of truth and falshood, the generality of men make the standards by which they accustom their understanding to judge. And thus, they falling into a habit of determining of truth, and falshood, by such wrong measures, it is no wonder they should embrace errour for certainty, and be very positive in things they have no ground for.

There is not any, who pretends to the least reason, but, when any of these his false maxims are brought to the test, must acknowledge them to be fallible, and such as he will not allow in those that differ from him; and yet, after he is convinced of this, you shall see him go on in the use of them, and, the very next occasion that offers, argue again upon the same grounds. Would one not be ready to think that men are willing to impose upon themselves and mislead their own understandings, who conduct them by such wrong measures, even after they see they cannot be relied on? But yet they will not appear so blameable, as may be thought at first sight: for I think there are a great many, that argue thus in earnest, and do it not to impose on themselves, or others. They are persuaded of what they say, and think there is weight in it, though in a like case they have been convinced there is none; but men would be intolerable to themselves, and contemptible to others, if they should embrace opinions without any ground, and hold what they could give no manner of reason for. True or false, solid or sandy, the mind must have some foundation to rest itself upon; and, as I have remarked in another place, it no sooner entertains any proposition, but it presently hastens to some hypothesis to bottom it on; till

till then it is unquiet and unſettled. So much do our own very tempers diſpoſe us to a right uſe of our underſtandings, if we would follow, as we ſhould, the inclinations of our nature.

In ſome matters of concernment, eſpecially thoſe of religion, men are not permitted to be always wavering and uncertain; they muſt embrace and profeſs ſome tenets or other; and it would be a ſhame, nay a contradiction too heavy for any one's mind to lie conſtantly under, for him to pretend ſeriouſly to be perſuaded of the truth of any religion, and yet not to be able to give any reaſon of his belief, or to ſay any thing for his preference of this to any other opinion: and therefore they muſt make uſe of ſome principles or other, and thoſe can be no other than ſuch as they have and can manage; and to ſay they are not in earneſt perſuaded by them, and do not reſt upon thoſe they make uſe of, is contrary to experience, and to allege that they are not miſled, when we complain they are.

If this be ſo, it will be urged, why then do they not make uſe of ſure and unqueſtionable principles, rather than reſt on ſuch grounds as may deceive them, and will, as is viſible, ſerve to ſupport errour, as well as truth?

To this I anſwer, the reaſon why they do not make uſe of better and ſurer principles, is becauſe they cannot: But this inability proceeds not from want of natural parts (for thoſe few, whoſe caſe that is, are to be excuſed) but for want of uſe and exerciſe. Few men are, from their youth, accuſtomed to ſtrict reaſoning, and to trace the dependence of any truth, in a long train of conſequences, to its remote principles, and to obſerve its connexion; and he that by frequent practice has not been uſed to this employment of his underſtanding, it is no more wonder, that he ſhould not, when he is grown into years, be able to bring his mind to it, than that he ſhould not be, on a ſudden, able to grave, or deſign, dance on the ropes, or write a good hand, who has never practiſed either of them.

Nay, the moſt of men are ſo wholly ſtrangers to this, that they do not ſo much as perceive their want of it; they

they dispatch the ordinary business of their callings by rote, as we say, as they have learnt it; and if at any time they miss success, they impute it to any thing, rather than want of thought or skill; that they conclude (because they know no better) they have in perfection: or, if there be any subject that interest, or fancy, has recommended to their thoughts, their reasoning about it is still after their own fashion; be it better or worse, it serves their turns, and is the best they are acquainted with; and, therefore, when they are led by it into mistakes, and their business succeeds accordingly, they impute it to any cross accident, or default of others, rather than to their own want of understanding; that is what nobody discovers, or complains of, in himself. Whatsoever made his business to miscarry, it was not want of right thought and judgment in himself: he sees no such defect in himself, but is satisfied that he carries on his designs well enough by his own reasoning, or at least should have done, had it not been for unlucky traverses not in his power. Thus, being content with this short and very imperfect use of his understanding, he never troubles himself to seek out methods of improving his mind, and lives all his life without any notion of close reasoning, in a continued connexion of a long train of consequences, from sure foundations; such as is requisite for the making out and clearing most of the speculative truths most men own to believe, and are most concerned in. Not to mention here, what I shall have occasion to insist on, by and by, more fully, viz. that in many cases it is not one series of consequences will serve the turn, but many different and opposite deductions must be examined and laid together, before a man can come to make a right judgment of the point in question. What then can be expected from men, that neither see the want of any such kind of reasoning, as this; nor, if they do, know how to set about it, or could perform it? You may as well set a countryman, who scarce knows the figures, and never cast up a sum of three particulars, to state a merchant's long account, and find the true balance of it.

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What then ſhould be done in the caſe? I anſwer, we ſhould always remember what I ſaid above, that the faculties of our ſouls are improved and made uſeful to us, juſt after the ſame manner as our bodies are. Would you have a man write or paint, dance or fence well, or perform any other manual operation dexterouſly and with eaſe; let him have ever ſo much vigour and activity, ſuppleneſs and addreſs naturally, yet nobody expects this from him, unleſs he has been uſed to it, and has employed time and pains in faſhioning and forming his hand, or outward parts, to theſe motions. Juſt ſo it is in the mind; would you have a man reaſon well, you muſt uſe him to it betimes, exerciſe his mind in obſerving the connexion of ideas, and following them in train. Nothing does this better than mathematics; which, therefore, I think ſhould be taught all thoſe who have the time and opportunity; not ſo much to make them mathematicians, as to make them reaſonable creatures; for though we all call ourſelves ſo, becauſe we are born to it, if we pleaſe; yet we may truly ſay, nature gives us but the ſeeds of it; we are born to be, if we pleaſe, rational creatures, but it is uſe and exerciſe only that makes us ſo, and we are, indeed, ſo no farther than induſtry and application has carried us. And, therefore, in ways of reaſoning, which men have not been uſed to, he that will obſerve the concluſions they take up, muſt be ſatisfied they are not all rational.

This has been the leſs taken notice of, becauſe every one, in his private affairs, uſes ſome ſort of reaſoning or other, enough to denominate him reaſonable. But the miſtake is, that he that is found reaſonable in one thing, is concluded to be ſo in all, and to think, or to ſay otherwiſe, is thought ſo unjuſt an affront, and ſo ſenſeleſs a cenſure, that nobody ventures to do it. It looks like the degradation of a man below the dignity of his nature. It is true, that he that reaſons well in any one thing, has a mind naturally capable of reaſoning well in others, and to the ſame degree of ſtrength and clearneſs, and poſſibly much greater, had his underſtanding been ſo employed. But it is as true that he who can reaſon well to-day, about one ſort of matters,

cannot at all reaſon to-day about others, though perhaps a year hence he may. But wherever a man's rational faculty fails him, and will not ſerve him to reaſon, there we cannot ſay he is rational, how capable ſoever he may be, by time and exerciſe, to become ſo.

Try in men of low and mean education, who have never elevated their thoughts above the ſpade and the plough, nor looked beyond the ordinary drudgery of a day-labourer. Take the thoughts of ſuch an one, uſed for many years to one track, out of that narrow compaſs he has been, all his life, confined to, you will find him no more capable of reaſoning than almoſt a perfect natural. Some one or two rules, on which their concluſions immediately depend, you will find in moſt men have governed all their thoughts; theſe, true or falſe, have been the maxims they have been guided by: take theſe from them, and they are perfectly at a loſs, their compaſs and pole-ſtar then are gone, and their underſtanding is perfectly at a nonplus; and therefore they either immediately return to their old maxims again, as the foundations of all truth to them, notwithſtanding all that can be ſaid to ſhow their weakneſs; or if they give them up to their reaſons, they, with them, give up all truth and farther inquiry, and think there is no ſuch thing as certainty. For if you would enlarge their thoughts, and ſettle them upon more remote and ſurer principles, they either cannot eaſily apprehend them; or, if they can, know not what uſe to make of them; for long deductions from remote principles are what they have not been uſed to, and cannot manage.

What then, can grown men never be improved, or enlarged in their underſtandings? I ſay not ſo; but this I think I may ſay, that it will not be done without induſtry and application, which will require more time and pains than grown men, ſettled in their courſe of life, will allow to it, and therefore very ſeldom is done. And this very capacity of attaining it, by uſe and exerciſe only, brings us back to that which I laid down before, that it is only practice that improves our minds as well as bodies, and we muſt expect nothing from our under-

underſtandings, any farther than they are perfected by habits.

The Americans are not all born with worſe underſtandings than the Europeans, though we ſee none of them have ſuch reaches in the arts and ſciences. And, among the children of a poor countryman, the lucky chance of education, and getting into the world, gives one infinitely the ſuperiority in parts over the reſt, who, continuing at home, had continued alſo juſt of the ſame ſize with his brethren.

He that has to do with young ſcholars, eſpecially in mathematics, may perceive how their minds open by degrees, and how it is exerciſe alone that opens them. Sometimes they will ſtick a long time at a part of a demonſtration, not for want of will and application, but really for want of perceiving the connexion of two ideas, that, to one whoſe underſtanding is more exerciſed, is as viſible as any thing can be. The ſame would be with a grown man beginning to ſtudy mathematics, the underſtanding, for want of uſe, often ſticks in every plain way, and he himſelf that is ſo puzzled, when he comes to ſee the connexion, wonders what it was he ſtuck at, in a caſe ſo plain.

Mathematics.

§. 7. I have mentioned mathematics as a way to ſettle in the mind an habit of reaſoning cloſely and in train; not that I think it neceſſary that all men ſhould be deep mathematicians, but that, having got the way of reaſoning, which that ſtudy neceſſarily brings the mind to, they might be able to transfer it to other parts of knowledge, as they ſhall have occaſion. For, in all ſorts of reaſoning, every ſingle argument ſhould be managed as a mathematical demonſtration; the connexion and dependence of ideas ſhould be followed, till the mind is brought to the ſource on which it bottoms, and obſerves the coherence all along, though in proofs of probability one ſuch train is not enough to ſettle the judgment, as in demonſtrative knowledge.

Where a truth is made out by one demonſtration, there needs no farther inquiry: but in probabilities, where there wants demonſtration to eſtabliſh the truth

beyond doubt, there it is not enough to trace one argument to its ſource, and obſerve its ſtrength and weakneſs, but all the arguments, after having been ſo examined on both ſides, muſt be laid in balance one againſt another, and, upon the whole, the underſtanding determine its aſſent.

This is a way of reaſoning the underſtanding ſhould be accuſtomed to, which is ſo different from what the illiterate are uſed to, that even learned men oftentimes ſeem to have very little or no notion of it. Nor is it to be wondered, ſince the way of diſputing, in the ſchools, leads them quite away from it, by inſiſting on one topical argument, by the ſucceſs of which the truth, or falſhood, of the queſtion is to be determined, and victory adjudged to the opponent, or defendant; which is all one as if one ſhould balance an account by one ſum, charged and diſcharged, when there are an hundred others to be taken into conſideration.

This, therefore, it would be well if men's minds were accuſtomed to, and that early; that they might not erect their opinions upon one ſingle view, when ſo many other are requiſite to make up the account, and muſt come into the reckoning, before a man can form a right judgment. This would enlarge their minds, and give a due freedom to their underſtandings, that they might not be led into errour by preſumption, lazineſs, or precipitancy; for I think nobody can approve ſuch a conduct of the underſtanding, as ſhould miſlead it from truth, though it be ever ſo much in faſhion to make uſe of it.

To this perhaps it will be objected, that to manage the underſtanding as I propoſe, would require every man to be a ſcholar, and to be furniſhed with all the materials of knowledge, and exerciſed in all the ways of reaſoning. To which I anſwer, that it is a ſhame for thoſe that have time, and the means to attain knowledge, to want any helps, or aſſiſtance, for the improvement of their underſtandings, that are to be got; and to ſuch I would be thought here chiefly to ſpeak. Thoſe methinks, who, by the induſtry and parts of their anceſtors, have been ſet free from a conſtant drudgery to their backs and their bellies, ſhould beſtow ſome of their

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spare time on their heads, and open their minds, by some trials and essays, in all the sorts and matters of reasoning. I have before mentioned mathematics, wherein algebra gives new helps and views to the understanding. If I propose these, it is not, as I said, to make every man a thorough mathematician, or a deep algebraist; but yet I think the study of them is of infinite use, even to grown men; first, by experimentally convincing them, that to make any one reason well, it is not enough to have parts wherewith he is satisfied, and that serve him well enough in his ordinary course. A man in those studies will see, that however good he may think his understanding, yet in many things, and those very visible, it may fail him. This would take off that presumption that most men have of themselves in this part; and they would not be so apt to think their minds wanted no helps to enlarge them, that there could be nothing added to the acuteness and penetration of their understandings.

Secondly, the study of mathematics would show them the necessity there is in reasoning, to separate all the distinct ideas, and see the habitudes that all those concerned in the present inquiry have to one another, and to lay by those which relate not to the proposition in hand, and wholly to leave them out of the reckoning. This is that which, in other subjects, besides quantity, is what is absolutely requisite to just reasoning, though in them it is not so easily observed, nor so carefully practised. In those parts of knowledge where it is thought demonstration has nothing to do, men reason as it were in the lump; and if, upon a summary and confused view, or upon a partial consideration, they can raise the appearance of a probability, they usually rest content; especially if it be in a dispute where every little straw is laid hold on, and every thing that can but be drawn-in any way to give colour to the argument, is advanced with ostentation. But that mind is not in a posture to find the truth, that does not distinctly take all the parts asunder, and, omitting what is not at all to the point, draw a conclusion from the result of all the particulars, which any way influence it. There is an-

other no less useful habit to be got by an application to mathematical demonstrations, and that is, of using the mind to a long train of consequences: but having mentioned that already, I shall not again here repeat it.

As to men whose fortunes and time are narrower, what may suffice them is not of that vast extent as may be imagined, and so comes not within the objection.

Nobody is under an obligation to know every thing. Knowledge and science in general, is the business only of those who are at ease and leisure. Those who have particular callings ought to understand them; and it is no unreasonable proposal, nor impossible to be compassed, that they should think and reason right about what is their daily employment. This one cannot think them incapable of, without levelling them with the brutes, and charging them with a stupidity below the rank of rational creatures.

Religion. §. 8. Besides his particular calling for the support of this life, every one has a concern in a future life, which he is bound to look after. This engages his thoughts in religion; and here it mightily lies upon him to understand and reason right. Men, therefore, cannot be excused from understanding the words, and framing the general notions relating to religion, right. The one day of seven, besides other days of rest, allows in the christian world time enough for this (had they no other idle hours) if they would but make use of these vacancies from their daily labour, and apply themselves to an improvement of knowledge with as much diligence as they often do to a great many other things that are useless, and had but those that would enter them according to their several capacities in a right way to this knowledge. The original make of their minds is like that of other men, and they would be found not to want understanding fit to receive the knowledge of religion, if they were a little encouraged and helped in it, as they should be. For there are instances of very mean people, who have raised their minds to a great sense and understanding of religion: and though these have not been so frequent as could be wished; yet they are enough to clear that condition of life

life from a necessity of gross ignorance, and to show that more might be brought to be rational creatures and christians (for they can hardly be thought really to be so, who, wearing the name, know not so much as the very principles of that religion) if due care were taken of them. For, if I mistake not, the peasantry lately in France (a rank of people under a much heavier pressure of want and poverty, than the day-labourers in England) of the reformed religion understood it much better, and could say more for it, than those of a higher condition among us.

But if it shall be concluded that the meaner sort of people must give themselves up to brutish stupidity in the things of their nearest concernment, which I see no reason for, this excuses not those of a freer fortune and education, if they neglect their understandings, and take no care to employ them as they ought, and set them right in the knowledge of those things for which principally they were given them. At least those, whose plentiful fortunes allow them the opportunities and helps of improvements, are not so few, but that it might be hoped great advancements might be made in knowledge of all kinds, especially in that of the greatest concern and largest views, if men would make a right use of their faculties, and study their own understandings.

§. 9. Outward corporeal objects, that constantly importune our senses and captivate our appetites, fail not to fill our heads with lively and lasting ideas of that kind. Here the mind needs not to be set upon getting greater store; they offer themselves fast enough, and are usually entertained in such plenty, and lodged so carefully, that the mind wants room, or attention, for others that it has more use and need of. To fit the understanding, therefore, for such reasoning as I have been above speaking of, care should be taken to fill it with moral and more abstract ideas; for these not offering themselves to the senses, but being to be framed to the understanding, people are generally so neglectful of a faculty they are apt to think wants nothing, that I fear most men's minds are more unfurnished with such ideas than is imagined. They often use the words, and

Ideas.

how can they be suspected to want the ideas? What I have said in the third book of my essay, will excuse me from any other answer to this question. But to convince people of what moment it is to their understandings to be furnished with such abstract ideas, steady and settled in them, give me leave to ask, how any one shall be able to know whether he be obliged to be just, if he has not established ideas in his mind of obligation and of justice; since knowledge consists in nothing but the perceived agreement or disagreement of those ideas? and so of all others the like, which concern our lives and manners. And if men do find a difficulty to see the agreement or disagreement of two angles, which lie before their eyes, unalterable in a diagram; how utterly impossible will it be to perceive it in ideas that have no other sensible object to represent them to the mind but sounds; with which they have no manner of conformity, and therefore had need to be clearly settled in the mind themselves, if we would make any clear judgment about them? This, therefore, is one of the first things the mind should be employed about, in the right conduct of the understanding, without which it is impossible it should be capable of reasoning right about those matters. But in these, and all other ideas, care must be taken that they harbour no inconsistencies, and that they have a real existence where real existence is supposed; and are not mere chimeras with a supposed existence.

Prejudice. §. 10. Every one is forward to complain of the prejudices that mislead other men or parties, as if he were free, and had none of his own. This being objected on all sides, it is agreed, that it is a fault and an hindrance to knowledge. What now is the cure? No other but this, that every man should let alone others prejudices, and examine his own. Nobody is convinced of his by the accusation of another; he recriminates by the same rule, and is clear. The only way to remove this great cause of ignorance and errour out of the world, is, for every one impartially to examine himself. If others will not deal fairly with their own minds, does that make my errours truths? or ought it to make me in love with them, and willing to impose

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on myself? If others love cataracts in their eyes, should that hinder me from couching of mine as soon as I can? Every one declares against blindness, and yet who almost is not fond of that which dims his sight, and keeps the clear light out of his mind, which should lead him into truth and knowledge? False or doubtful positions, relied upon as unquestionable maxims, keep those in the dark from truth who build on them. Such are usually the prejudices imbibed from education, party, reverence, fashion, interest, &c. This is the mote which every one sees in his brother's eye, but never regards the beam in his own. For who is there almost that is ever brought fairly to examine his own principles, and see whether they are such as will bear the trial? But yet this should be one of the first things every one should set about, and be scrupulous in, who would rightly conduct his understanding in the search of truth and knowledge.

To those who are willing to get rid of this great hindrance of knowledge, (for to such only I write) to those who would shake off this great and dangerous impostor, prejudice, who dresses up falshood in the likeness of truth, and so dexterously hoodwinks men's minds, as to keep them in the dark, with a belief that they are more in the light than any that do not see with their eyes; I shall offer this one mark whereby prejudice may be known. He that is strongly of any opinion, must suppose (unless he be self-condemned) that his persuasion is built upon good grounds; and that his assent is no greater than what the evidence of the truth he holds forces him to; and that they are arguments, and not inclination, or fancy, that make him so confident and positive in his tenets. Now if, after all his profession, he cannot bear any opposition to his opinion, if he cannot so much as give a patient hearing, much less examine and weigh the arguments on the other side, does he not plainly confess it is prejudice governs him? and it is not the evidence of truth, but some lazy anticipation, some beloved presumption, that he desires to rest undisturbed in. For, if what he holds be, as he gives out, well fenced with evidence, and he sees it to be true, what need he fear to put it to the proof? If his opinion be

settled

settled upon a firm foundation, if the arguments that support it, and have obtained his assent, be clear, good, and convincing, why should he be shy to have it tried whether they be proof or not? He whose assent goes beyond this evidence, owes this excess of his adherence only to prejudice, and does in effect own it, when he refuses to hear what is offered against it; declaring thereby, that it is not evidence he seeks, but the quiet enjoyment of the opinion he is fond of, with a forward condemnation of all that may stand in opposition to it, unheard and unexamined; which, what is it but prejudice? "qui æquum statuerit, parte inauditâ alterâ, etiamsi æquum statuerit, haud æquus fuerit." He that would acquit himself in this case as a lover of truth, not giving way to any pre-occupation, or bias, that may mislead him, must do two things that are not very common, nor very easy.

Indifferency. §. 11. First, he must not be in love with any opinion, or wish it to be true, till he knows it to be so, and then he will not need to wish it: for nothing that is false can deserve our good wishes, nor a desire that it should have the place and force of truth; and yet nothing is more frequent than this. Men are fond of certain tenets upon no other evidence but respect and custom, and think they must maintain them, or all is gone; though they have never examined the ground they stand on, nor have ever made them out to themselves, or can make them out to others: we should contend earnestly for the truth, but we should first be sure that it is truth, or else we fight against God, who is the God of truth, and do the work of the devil, who is the father and propagator of lyes; and our zeal, though ever so warm, will not excuse us, for this is plainly prejudice.

Examine. §. 12. Secondly, he must do that which he will find himself very averse to, as judging the thing unnecessary, or himself incapable of doing it. He must try whether his principles be certainly true, or not, and how far he may safely rely upon them. This, whether fewer have the heart or the skill to do, I shall not determine; but this, I am sure, is that which

which every one ought to do, who professes to love truth, and would not impose upon himself; which is a surer way to be made a fool of, than by being exposed to the sophistry of others. The disposition to put any cheat upon ourselves works constantly, and we are pleased with it, but are impatient of being bantered or milled by others. The inability I here speak of, is not any natural defect that makes men incapable of examining their own principles. To such, rules of conducting their understandings are useless; and that is the case of very few. The great number is of those whom the ill habit of never exerting their thoughts has disabled; the powers of their minds are starved by disuse, and have lost that reach and strength which nature fitted them to receive from exercise. Those who are in a condition to learn the first rules of plain arithmetic, and could be brought to cast up an ordinary sum, are capable of this, if they had but accustomed their minds to reasoning: but they that have wholly neglected the exercise of their understandings in this way, will be very far, at first, from being able to do it, and as unfit for it as one unpractised in figures to cast up a shop-book, and, perhaps, think it as strange to be set about it. And yet it must nevertheless be confessed to be a wrong use of our understandings, to build our tenets (in things where we are concerned to hold the truth) upon principles that may lead us into errour. We take our principles at hap-hazard, upon trust, and without ever having examined them, and then believe a whole system, upon a presumption that they are true and solid; and what is all this, but childish, shameful, senseless credulity?

In these two things, viz. an equal indifferency for all truth; I mean the receiving it, the love of it, as truth, but not loving it for any other reason, before we know it to be true; and in the examination of our principles, and not receiving any for such, nor building on them, till we are fully convinced, as rational creatures, of their solidity, truth, and certainty; consists that freedom of the understanding which is necessary to a rational creature, and without which it is not truly an understanding. It is conceit, fancy, extravagance, any thing rather than

than understanding, if it must be under the constraint of receiving and holding opinions by the authority of any thing but their own, not fancied, but perceived, evidence. This was rightly called imposition, and is of all other the worst and most dangerous sort of it. For we impose upon ourselves, which is the strongest imposition of all others; and we impose upon ourselves in that part which ought with the greatest care to be kept free from all imposition. The world is apt to cast great blame on those who have an indifferency for opinions, especially in religion. I fear this is the foundation of great errour and worse consequences. To be indifferent which of two opinions is true, is the right temper of the mind that preserves it from being imposed on, and disposes it to examine with that indifferency, till it has done its best to find the truth, and this is the only direct and safe way to it. But to be indifferent whether we embrace falshood or truth, is the great road to errour. Those who are not indifferent which opinion is true, are guilty of this; they suppose, without examining, that what they hold is true, and then think they ought to be zealous for it. Those, it is plain by their warmth and eagerness, are not indifferent for their own opinions, but methinks are very indifferent whether they be true or false; since they cannot endure to have any doubts raised, or objections made against them; and it is visible they never have made any themselves, and so, never having examined them, know not, nor are concerned, as they should be, to know whether they be true or false.

These are the common and most general miscarriages which I think men should avoid, or rectify, in a right conduct of their understandings, and should be particularly taken care of in education. The business whereof, in respect of knowledge, is not, as I think, to perfect a learner in all or any one of the sciences, but to give his mind that freedom, that disposition, and those habits, that may enable him to attain any part of knowledge he shall apply himself to, or stand in need of, in the future course of his life.

This,

This, and this only, is well principling, and not the instilling a reverence and veneration for certain dogmas, under the specious title of principles, which are often so remote from that truth and evidence which belongs to principles, that they ought to be rejected, as false and erroneous; and often cause men so educated, when they come abroad into the world, and find they cannot maintain the principles so taken up and rested in, to cast off all principles, and turn perfect sceptics, regardless of knowledge and virtue.

There are several weaknesses and defects in the understanding, either from the natural temper of the mind, or ill habits taken up, which hinder it in its progress to knowledge. Of these, there are as many, possibly, to be found, if the mind were thoroughly studied, as there are diseases of the body, each whereof clogs and disables the understanding to some degree, and therefore deserves to be looked after and cured. I shall set down some few to excite men, especially those who make knowledge their business, to look into themselves, and observe whether they do not indulge some weaknesses, allow some miscarriages in the management of their intellectual faculty, which is prejudicial to them in the search of truth.

Observations.

§. 13. Particular matters of fact are the undoubted foundations on which our civil and natural knowledge is built: the benefit the understanding makes of them, is to draw from them conclusions, which may be as standing rules of knowledge, and consequently of practice. The mind often makes not that benefit it should of the information it receives from the accounts of civil or natural historians, by being too forward or too slow in making observations on the particular facts recorded in them.

There are those who are very assiduous in reading, and yet do not much advance their knowledge by it. They are delighted with the stories that are told, and perhaps can tell them again, for they make all they read nothing but history to themselves; but not reflecting on it, not making to themselves observations from what they read, they are very little improved by all that crowd of particulars,

ticulars, that either pass through, or lodge themselves in their understandings. They dream on in a constant course of reading and cramming themselves; but not digesting any thing, it produces nothing but an heap of crudities.

If their memories retain well, one may say, they have the materials of knowledge; but, like those for building, they are of no advantage, if there be no other use made of them but to let them lie heaped up together. Opposite to these, there are others who lose the improvement they should make of matters of fact by a quite contrary conduct. They are apt to draw general conclusions, and raise axioms from every particular they meet with. These make as little true benefit of history as the other; nay, being of forward and active spirits, receive more harm by it; it being of worse consequence to steer one's thoughts by a wrong rule, than to have none at all; errour doing to busy men much more harm, than ignorance to the slow and sluggish. Between these, those seem to do best, who taking material and useful hints, sometimes from single matters of fact, carry them in their minds to be judged of, by what they shall find in history, to confirm or reverse these imperfect observations; which may be established into rules fit to be relied on, when they are justified by a sufficient and wary induction of particulars. He that makes no such reflections on what he reads, only loads his mind with a rhapsody of tales, fit, in winter-nights, for the entertainment of others: and he that will improve every matter of fact into a maxim, will abound in contrary observations, that can be of no other use but to perplex and pudder him, if he compares them; or else to misguide him, if he gives himself up to the authority of that, which for its novelty, or for some other fancy, best pleases him.

Bias. §. 14. Next to these, we may place those who suffer their own natural tempers and passions they are possessed with, to influence their judgments, especially of men and things, that may any way relate to their present circumstances and interest. Truth is all simple, all pure, will bear no mixture of any thing

else with it. It is rigid and inflexible to any bye interests; and so should the understanding be, whose use and excellency lies in conforming itself to it. To think of every thing just as it is in itself, is the proper business of the understanding, though it be not that which men always imploy it to. This all men, at first hearing, allow, is the right use every one should make of his understanding. Nobody will be at such an open defiance with common sense, as to profess that we should not endeavour to know, and think of things as they are in themselves; and yet there is nothing more frequent than to do the contrary; and men are apt to excuse themselves; and think they have reason to do so, if they have but a pretence that it is for God, or a good cause; that is, in effect, for themselves, their own persuasion, or party: for those in their turns the several sects of men, especially in matters of religion, entitle God and a good cause. But God requires not men to wrong or misuse their faculties for him, nor to lye to others, or themselves, for his sake; which they purposely do, who will not suffer their understandings to have right conceptions of the things proposed to them, and designedly restrain themselves from having just thoughts of every thing, as far as they are concerned to inquire. And as for a good cause, that needs not such ill helps; if it be good, truth will support it, and it has no need of fallacy or falshood.

Arguments.

§. 15. Very much of kin to this, is the hunting after arguments to make good one side of a question, and wholly to neglect and refuse those which favour the other side. What is this but wilfully to misguide the understanding, and is so far from giving truth its due value, that it wholly debases it: espouse opinions that best comport with their power, profit, or credit, and then seek arguments to support them? Truth light upon this way, is of no more avail to us than errour; for what is so taken up by us may be false as well as true, and he has not done his duty who has thus stumbled upon truth in his way to preferment.

There is another, but more innocent way of collecting arguments, very familiar among bookish men, which is

is to furnish themselves with the arguments they meet with pro and con in the questions they study. This helps them not to judge right, nor argue strongly, but only to talk copiously on either side, without being steady and settled in their own judgments: For such arguments gathered from other men's thoughts, floating only in the memory, are there ready, indeed, to supply copious talk with some appearance of reason, but are far from helping us to judge right. Such variety of arguments only distract the understanding that relies on them, unless it has gone farther than such a superficial way of examining; this is to quit truth for appearance, only to serve our vanity. The sure and only way to get true knowledge, is to form in our minds clear settled notions of things, with names annexed to those determined ideas. These we are to consider, with their several relations and habitudes, and not amuse ourselves with floating names, and words of indetermined signification, which we can use in several senses to serve a turn. It is in the perception of the habitudes and respects our ideas have one to another, that real knowledge consists; and when a man once perceives how far they agree or disagree one with another, he will be able to judge of what other people say, and will not need to be led by the arguments of others, which are many of them nothing but plausible sophistry. This will teach him to state the question right, and see whereon it turns; and thus he will stand upon his own legs, and know by his own understanding. Whereas by collecting and learning arguments by heart, he will be but a retainer to others; and when any one questions the foundations they are built upon, he will be at a nonplus, and be fain to give up his implicit knowledge.

Haste. §. 16. Labour for labour-sake is against nature. The understanding, as well as all the other faculties, chooses always the shortest way to its end, would presently obtain the knowledge it is about, and then set upon some new inquiry. But this, whether laziness or haste, often misleads it, and makes it content itself with improper ways of search, and such as will not serve the turn: sometimes it rests upon testimony,

timony, when teſtimony of right has nothing to do, becauſe it is eaſier to believe than to be ſcientifically inſtructed: ſometimes it contents itſelf with one argument, and reſts ſatisfied with that, as it were a demonſtration, whereas the thing under proof is not capable of demonſtration, and therefore muſt be ſubmitted to the trial of probabilities, and all the material arguments pro and con be examined and brought to a balance. In ſome caſes the mind is determined by probable topics in inquiries where demonſtration may be had. All theſe, and ſeveral others, which lazineſs, impatience, cuſtom, and want of uſe and attention lead men into, are miſapplications of the underſtanding in the ſearch of truth. In every queſtion the nature and manner of the proof it is capable of ſhould be conſidered, to make our inquiry ſuch as it ſhould be. This would ſave a great deal of frequently miſemployed pains, and lead us ſooner to that diſcovery and poſſeſſion of truth we are capable of. The multiplying variety of arguments, eſpecially frivolous ones, ſuch as are all that are merely verbal, is not only loſt labour, but cumbers the memory to no purpoſe, and ſerves only to hinder it from ſeizing and holding of the truth in all thoſe caſes which are capable of demonſtration. In ſuch a way of proof the truth and certainty is ſeen, and the mind fully poſſeſſes itſelf of it; when in the other way of aſſent it only hovers about it, is amuſed with uncertainties. In this ſuperficial way, indeed, the mind is capable of more variety of plauſible talk, but is not enlarged, as it ſhould be, in its knowledge. It is to this ſame haſte and impatience of the mind alſo, that a not due tracing of the arguments to their true foundation is owing; men ſee a little, preſume a great deal, and ſo jump to the concluſion. This is a ſhort way to fancy and conceit, and (if firmly embraced) to opinionatry, but is certainly the fartheſt way about to knowledge. For he that will know, muſt by the connexion of the proofs ſee the truth, and the ground it ſtands on; and therefore, if he has for haſte ſkipt over what he ſhould have examined, he muſt begin and go over all again, or elſe he will never come to knowledge.

Deſultory. §. 17. Another fault of as ill conſequence as this, which proceeds alſo from lazineſs, with a mixture of vanity, is the ſkipping from one ſort of knowledge to another. Some men's tempers are quickly weary of any one thing. Conſtancy and aſſiduity is what they cannot bear: the ſame ſtudy long continued in, is as intolerable to them, as the appearing long in the ſame clothes, or faſhion, is to a court-lady.

Smattering. §. 18. Others, that they may ſeem univerſally knowing, get a little ſmattering in every thing. Both theſe may fill their heads with ſuperficial notions of things, but are very much out of the way of attaining truth or knowledge.

Univerſality. §. 19. I do not here ſpeak againſt the taking a taſte of every ſort of knowledge; it is certainly very uſeful and neceſſary to form the mind; but then it muſt be done in a different way, and to a different end. Not for talk and vanity to fill the head with ſhreds of all kinds, that he who is poſſeſſed of ſuch a frippery, may be able to match the diſcourſes of all he ſhall meet with, as if nothing could come amiſs to him; and his head was ſo well ſtored a magazine, that nothing could be propoſed which he was not maſter of, and was readily furniſhed to entertain any one on. This is an excellency, indeed, and a great one too, to have a real and true knowledge in all, or moſt of the objects of contemplation. But it is what the mind of one and the ſame man can hardly attain unto; and the inſtances are ſo few of thoſe who have, in any meaſure, approached towards it, that I know not whether they are to be propoſed as examples in the ordinary conduct of the underſtanding. For a man to underſtand fully the buſineſs of his particular calling in the commonwealth, and of religion, which is his calling as he is a man in the world, is uſually enough to take up his whole time; and there are few that inform themſelves in theſe, which is every man's proper and peculiar buſineſs, ſo to the bottom as they ſhould do. But though this be ſo, and there are very few men that extend their thoughts towards univerſal knowledge; yet I do not doubt, but if

if the right way were taken, and the methods of inquiry were ordered as they should be, men of little business and great leisure might go a great deal farther in it than is usually done. To turn to the business in hand; the end and use of a little insight in those parts of knowledge, which are not a man's proper business, is to accustom our minds to all sorts of ideas, and the proper ways of examining their habitudes and relations. This gives the mind a freedom, and the exercising the understanding in the several ways of inquiry and reasoning, which the most skilful have made use of, teaches the mind sagacity and wariness, and a suppleness to apply itself more closely and dexterously to the bents and turns of the matter in all its researches. Besides, this universal taste of all the sciences, with an indifferency before the mind is possessed with any one in particular, and grown into love and admiration of what is made its darling, will prevent another evil, very commonly to be observed in those who have from the beginning been seasoned only by one part of knowledge. Let a man be given up to the contemplation of one sort of knowledge, and that will become every thing. The mind will take such a tincture from a familiarity with that object, that every thing else, how remote soever, will be brought under the same view. A metaphysician will bring plowing and gardening immediately to abstract notions: the history of nature shall signify nothing to him. An alchemist, on the contrary, shall reduce divinity to the maxims of his laboratory: explain morality by sal, sulphur and mercury; and allegorise the scripture itself, and the sacred mysteries thereof, into the philosopher's stone. And I heard once a man, who had a more than ordinary excellency in music, seriously accommodate Moses's seven days of the first week to the notes of music, as if from thence had been taken the measure and method of the creation. It is of no small consequence to keep the mind from such a possession, which I think is best done by giving it a fair and equal view of the whole intellectual world, wherein it may see the order, rank, and beauty of the whole, and give a just allow-

ance to the diſtinct provinces of the ſeveral ſciences in the due order and uſefulneſs of each of them.

If this be that which old men will not think neceſſary, nor be eaſily brought to; it is fit, at leaſt, that it ſhould be practiſed in the breeding of the young. The buſineſs of education, as I have already obſerved, is not, as I think, to make them perfect in any one of the ſciences, but ſo to open and diſpoſe their minds, as may beſt make them capable of any, when they ſhall apply themſelves to it. If men are, for a long time, accuſtomed only to one ſort or method of thoughts, their minds grow ſtiff in it, and do not readily turn to another. It is, therefore, to give them this freedom, that I think they ſhould be made to look into all ſorts of knowledge, and exerciſe their underſtandings in ſo wide a variety and ſtock of knowledge. But I do not propoſe it as a variety and ſtock of knowledge, but a variety and freedom of thinking, as an increaſe of the powers and activity of the mind, not as an enlargement of its poſſeſſions.

Reading.

§. 20. This is that which I think great readers are apt to be miſtaken in. Thoſe who have read of every thing, are thought to underſtand every thing too; but it is not always ſo. Reading furniſhes the mind only with materials of knowledge, it is thinking makes what we read ours. We are of the ruminating kind, and it is not enough to cram ourſelves with a great load of collections; unleſs we chew them over again, they will not give us ſtrength and nouriſhment. There are, indeed, in ſome writers viſible inſtances of deep thoughts, cloſe and acute reaſoning, and ideas well purſued. The light theſe would give would be of great uſe, if their reader would obſerve and imitate them; all the reſt at beſt are but particulars fit to be turned into knowledge; but that can be done only by our own meditation, and examining the reach, force and coherence of what is ſaid; and then, as far as we apprehend and ſee the connexion of ideas, ſo far it is ours; without that, it is but ſo much looſe matter floating in our brain. The memory may be ſtored, but the judgment is little better, and the ſtock of knowledge not

not increased, by being able to repeat what others have said, or produce the arguments we have found in them. Such a knowledge as this is but knowledge by hear-say, and the ostentation of it is at best but talking by rote, and very often upon weak and wrong principles. For all that is to be found in books, is not built upon true foundations, nor always rightly deduced from the principles it is pretended to be built on. Such an examen as is requisite to discover that, every reader's mind is not forward to make; especially in those who have given themselves up to a party, and only hunt for what they can scrape together, that may favour and support the tenets of it. Such men wilfully exclude themselves from truth, and from all true benefit to be received by reading. Others of more indifferency often want attention and industry. The mind is backward in itself to be at the pains to trace every argument to its original, and to see upon what basis it stands, and how firmly; but yet it is this that gives so much the advantage to one man more than another in reading. The mind should by severe rules be tyed down to this, at first, uneasy task; use and exercise will give it facility. So that those who are accustomed to it, readily, as it were with one cast of the eye, take a view of the argument, and presently, in most cases, see where it bottoms. Those who have got this faculty, one may say, have got the true key of books, and the clue to lead them through the mizmaze of variety of opinions and authors to truth and certainty. This young beginners should be entered in, and showed the use of, that they might profit by their reading. Those who are strangers to it, will be apt to think it too great a clog in the way of men's studies, and they will suspect they shall make but small progress, if, in the books they read, they must stand to examine and unravel every argument, and follow it step by step up to its original.

I answer, this is a good objection, and ought to weigh with those whose reading is designed for much talk and little knowledge, and I have nothing to say to it. But I am here inquiring into the conduct of the understanding in its progress towards knowledge; and to those

who aim at that, I may say, that he who fair and softly goes steadily forward in a course that points right, will sooner be at his journey's end, than he that runs after every one he meets, though he gallop all day full-speed.

To which let me add, that this way of thinking on, and profiting by, what we read, will be a clog and rub to any one only in the beginning: when custom and exercise has made it familiar, it will be dispatched, on most occasions, without resting or interruption in the course of our reading. The motions and views of a mind exercised that way, are wonderfully quick; and a man used to such sort of reflections, sees as much at one glimpse as would require a long discourse to lay before another, and make out in an entire and gradual deduction. Besides that, when the first difficulties are over, the delight and sensible advantage it brings, mightily encourages and enlivens the mind in reading, which without this is very improperly called study.

Intermediate principles.

§. 21. As an help to this, I think it may be proposed, that for the saving the long progression of the thoughts to remote and first principles in every case, the mind should provide it several stages; that is to say, intermediate principles, which it might have recourse to in the examining those positions that come in its way. These, though they are not self-evident principles, yet if they have been made out from them by a wary and unquestionable deduction, may be depended on as certain and infallible truths, and serve as unquestionable truths to prove other points depending on them by a nearer and shorter view than remote and general maxims. These may serve as landmarks to show what lies in the direct way of truth, or is quite besides it. And thus mathematicians do, who do not in every new problem run it back to the first axioms, through all the whole train of intermediate propositions. Certain theorems, that they have settled to themselves upon sure demonstration, serve to resolve to them multitudes of propositions which depend on them, and are as firmly made out from thence, as if the mind went afresh over every link of the whole chain that ties them to first self-evident principles. Only in other

sciences

sciences great care is to be taken, that they establish those intermediate principles with as much caution, exactness, and indifferency, as mathematicians use in the settling any of their great theorems. When this is not done, but men take up the principles in this or that science upon credit, inclination, interest, &c. in haste, without due examination, and most unquestionable proof, they lay a trap for themselves, and, as much as in them lies, captivate their understandings to mistake, falshood and errour.

Partiality.

§. 22. As there is a partiality to opinions, which, as we have already observed, is apt to mislead the understanding; so there is often a partiality to studies, which is prejudicial also to knowledge and improvement. Those sciences which men are particularly versed in, they are apt to value and extol, as if that part of knowledge which every one has acquainted himself with, were that alone which was worth the having, and all the rest were idle and empty amusements, comparatively of no use or importance. This is the effect of ignorance, and not knowledge, the being vainly puffed up with a flatulency, arising from a weak and narrow comprehension. It is not amiss that every one should relish the science that he has made his peculiar study; a view of its beauties, and a sense of its usefulness, carries a man on with the more delight and warmth in the pursuit and improvement of it. But the contempt of all other knowledge, as if it were nothing in comparison of law or physic, of astronomy or chemistry, or perhaps some yet meaner part of knowledge, wherein I have got some smattering, or am somewhat advanced, is not only the mark of a vain or little mind; but does this prejudice in the conduct of the understanding, that it coops it up within narrow bounds, and hinders it from looking abroad into other provinces of the intellectual world, more beautiful possibly, and more fruitful than that which it had, till then, laboured in; wherein it might find, besides new knowledge, ways or hints whereby it might be enabled the better to cultivate its own.

Theology. §. 23. There is, indeed, one science (as they are now distinguished) incomparably above all the rest, where it is not by corruption narrowed into a trade or faction, for mean or ill ends, and secular interests; I mean theology, which, containing the knowledge of God and his creatures, our duty to him and our fellow-creatures, and a view of our present and future state, is the comprehension of all other knowledge directed to its true end; i. e. the honour and veneration of the Creator, and the happiness of mankind. This is that noble study which is every man's duty, and every one that can be called a rational creature is capable of. The works of nature, and the words of revelation, display it to mankind in characters so large and visible, that those who are not quite blind may in them read and see the first principles and most necessary parts of it; and from thence, as they have time and industry, may be enabled to go on to the more abstruse parts of it, and penetrate into those infinite depths filled with the treasures of wisdom and knowledge. This is that science which would truly enlarge men's minds, were it studied, or permitted to be studied, every where, with that freedom, love of truth and charity which it teaches, and were not made, contrary to its nature, the occasion of strife, faction, malignity, and narrow impositions. I shall say no more here of this, but that it is undoubtedly a wrong use of my understanding, to make it the rule and measure of another man's; a use which it is neither fit for, nor capable of.

Partiality. §. 24. This partiality, where it is not permitted an authority to render all other studies insignificant or contemptible, is often indulged so far as to be relied upon, and made use of in other parts of knowledge, to which it does not at all belong, and wherewith it has no manner of affinity. Some men have so used their heads to mathematical figures; that, giving a preference to the methods of that science, they introduce lines and diagrams into their study of divinity, or politic inquiries, as if nothing could be known without them; and others accustomed to retired speculations, run natural philosophy into metaphysical notions, and

and the abstract generalities of logic; and how often may one meet with religion and morality treated of in the terms of the laboratory, and thought to be improved by the methods and notions of chemistry? But he that will take care of the conduct of his understanding, to direct it right to the knowledge of things, must avoid those undue mixtures, and not, by a fondness for what he has found useful and necessary in one, transfer it to another science, where it serves only to perplex and confound the understanding. It is a certain truth, that "res nolunt malè administrari;" it is no less certain "res nolunt malè intelligi." Things themselves are to be considered as they are in themselves, and then they will show us in what way they are to be understood. For to have right conceptions about them, we must bring our understandings to the inflexible natures, and unalterable relations of things, and not endeavour to bring things to any preconceived notions of our own.

There is another partiality very commonly observable in men of study, no less prejudicial, nor ridiculous, than the former; and that is a fantastical and wild attributing all knowledge to the ancients alone, or to the moderns. This raving upon antiquity in matter of poetry, Horace has wittily described and exposed in one of his satires. The same sort of madness may be found in reference to all the other sciences. Some will not admit an opinion not authorised by men of old, who were then all giants in knowledge. Nothing is to be put into the treasury of truth, or knowledge, which has not the stamp of Greece, or Rome, upon it; and since their days will scarce allow, that men have been able to see, think or write. Others, with a like extravagancy, contemn all that the ancients have left us, and being taken with the modern inventions and discoveries, lay by all that went before, as if whatever is called old must have the decay of time upon it, and truth, too, were liable to mould and rottenness. Men, I think, have been much the same for natural endowments, in all times. Fashion, discipline, and education, have put eminent differences in the ages of several countries, and made one generation much differ from another in arts and sciences: but truth

truth is always the same; time alters it not, nor is it the better, or worse, for being of ancient or modern tradition. Many were eminent in former ages of the world for their discovery and delivery of it; but though the knowledge they have left us be worth our study, yet they exhausted not all its treasure; they left a great deal for the industry and sagacity of after-ages, and so shall we. That was once new to them, which any one now receives with veneration for its antiquity, nor was it the worse for appearing as a novelty; and that which is now embraced for its newness, will to posterity be old, but not thereby be less true, or less genuine. There is no occasion, on this account, to oppose the ancients and the moderns to one another, or to be squeamish on either side. He that wisely conducts his mind in the pursuit of knowledge, will gather what lights, and get what helps he can, from either of them, from whom they are best to be had, without adoring the errours, or rejecting the truths, which he may find mingled in them.

Another partiality may be observed, in some to vulgar, in others, to heterodox tenets: some are apt to conclude, that what is the common opinion cannot but be true; so many men's eyes they think cannot but see right; so many men's understandings of all sorts cannot be deceived; and, therefore, will not venture to look beyond the received notions of the place and age, nor have so presumptuous a thought as to be wiser than their neighbours. They are content to go with the crowd, and so go easily, which they think is going right, or at least serves them as well. But however "vox populi vox Dei" has prevailed as a maxim; yet I do not remember where ever God delivered his oracles by the multitude; or nature, truths by the herd. On the other side, some fly all common opinions as either false or frivolous. The title of many-headed beast is a sufficient reason to them to conclude, that no truths of weight or consequence can be lodged there. Vulgar opinions are suited to vulgar capacities, and adapted to the ends of those that govern. He that will know the truth of things, must leave the common and beaten track, which none but weak and servile minds are satisfied

satisfied to trudge along continually in. Such nice palates relish nothing but strange notions quite out of the way: Whatever is commonly received, has the mark of the beast on it; and they think it a lessening to them to hearken to it, or receive it; their mind runs only after paradoxes; these they seek, these they embrace, these alone they vent; and so, as they think, distinguish themselves from the vulgar. But common or uncommon are not the marks to distinguish truth or falshood, and therefore should not be any bias to us in our inquiries. We should not judge of things by men's opinions, but of opinions by things. The multitude reason but ill, and therefore may be well suspected, and cannot be relied on, nor should be followed, as a sure guide; but philosophers, who have quitted the orthodoxy of the community, and the popular doctrines of their countries, have fallen into as extravagant and as absurd opinions as ever common reception countenanced. It would be madness to refuse to breathe the common air, or quench one's thirst with water, because the rabble use them to these purposes; and if there are conveniences of life which common use reaches not, it is not reason to reject them, because they are not grown into the ordinary fashion of the country, and every villager doth not know them.

Truth, whether in or out of fashion, is the measure of knowledge, and the business of the understanding; whatsoever is besides that, however authorised by consent, or recommended by rarity, is nothing but ignorance, or something worse.

Another sort of partiality there is, whereby men impose upon themselves, and by it make their reading little useful to themselves; I mean the making use of the opinions of writers, and laying stress upon their authorities, wherever they find them to favour their own opinions.

There is nothing almost has done more harm to men dedicated to letters, than giving the name of study to reading, and making a man of great reading to be the same with a man of great knowledge, or at least to be a title

title of honour. All that can be recorded in writing are only facts or reasonings. Facts are of three sorts;

1. Merely of natural agents, observable in the ordinary operations of bodies one upon another, whether in the visible course of things left to themselves, or in experiments made by them, applying agents and patients to one another, after a peculiar and artificial manner.

2. Of voluntary agents, more especially the actions of men in society, which makes civil and moral history.

3. Of opinions.

In these three consists, as it seems to me, that which commonly has the name of learning; to which perhaps some may add a distinct head of critical writings, which indeed at bottom is nothing but matter of fact; and resolves itself into this, that such a man, or set of men, used such a word, or phrase, in such a sense; i. e. that they made such sounds the marks of such ideas.

Under reasonings I comprehend all the discoveries of general truths made by human reason, whether found by intuition, demonstration, or probable deductions. And this is that which is, if not alone knowledge, (because the truth or probability of particular propositions may be known too) yet is, as may be supposed, most properly the business of those who pretend to improve their understandings, and make themselves knowing by reading.

Books and reading are looked upon to be the great helps of the understanding, and instruments of knowledge, as it must be allowed that they are; and yet I beg leave to question whether these do not prove an hindrance to many, and keep several bookish men from attaining to solid and true knowledge. This, I think, I may be permitted to say, that there is no part wherein the understanding needs a more careful and wary conduct than in the use of books; without which they will prove rather innocent amusements, than profitable employments of our time, and bring but small additions to our knowledge.

There is not seldom to be found, even amongst those who aim at knowledge, who with an unwearied industry employ their whole time in books, who scarce allow them-

themselves time to eat or sleep, but read, and read, and read on, yet make no great advances in real knowledge, though there be no defect in their intellectual faculties, to which their little progress can be imputed. The mistake here is, that it is usually supposed, that by reading, the author's knowledge is transfused into the reader's understanding; and so it is, but not by bare reading, but by reading and understanding what he writ. Whereby I mean, not barely comprehending what is affirmed or denied in each proposition (though that great readers do not always think themselves concerned precisely to do) but to see and follow the train of his reasonings, observe the strength and clearness of their connexion, and examine upon what they bottom. Without this a man may read the discourses of a very rational author, writ in a language, and in propositions, that he very well understands, and yet acquire not one jot of his knowledge; which consisting only in the perceived, certain, or probable connexion of the ideas made use of in his reasonings, the reader's knowledge is no farther increased than he perceives that; so much as he sees of this connexion, so much he knows of the truth, or probability, of that author's opinions.

All that he relies on, without this perception, he takes upon trust, upon the author's credit, without any knowledge of it at all. This makes me not at all wonder to see some men so abound in citations, and build so much upon authorities, it being the sole foundation on which they bottom most of their own tenets; so that, in effect, they have but a second-hand, or implicit knowledge; i. e. are in the right, if such an one from whom they borrowed it, were in the right in that opinion which they took from him; which indeed is no knowledge at all. Writers of this or former ages may be good witnesses of matters of fact which they deliver, which we may do well to take upon their authority; but their credit can go no farther than this; it cannot at all affect the truth and falsehood of opinions, which have no other sort of trial but reason and proof, which they themselves made use of to make themselves knowing, and so must others too, that will partake in their know-

ledge. Indeed it is an advantage that they have been at the pains to find out the proofs, and lay them in that order that may show the truth or probability of their conclusions; and for this we owe them great acknowledgments for saving us the pains in searching out those proofs which they have collected for us, and which possibly, after all our pains, we might not have found, nor been able to have set them in so good a light as that which they left them us in. Upon this account we are mightily beholden to judicious writers of all ages, for those discoveries and discourses they have left behind them for our instruction, if we know how to make a right use of them; which is not to run them over in an hasty perusal, and perhaps lodge their opinions, or some remarkable passages in our memories; but to enter into their reasonings, examine their proofs, and then judge of the truth or falsehood, probability or improbability, of what they advance; not by any opinion we have entertained of the author; but by the evidence he produces, and the conviction he affords us, drawn from things themselves. Knowing is seeing, and if it be so, it is madness to persuade ourselves that we do so by another man's eyes, let him use ever so many words to tell us, that what he asserts is very visible. Till we ourselves see it with our own eyes, and perceive it by our own understandings, we are as much in the dark, and as void of knowledge as before, let us believe any learned author as much as we will.

Euclid and Archimedes are allowed to be knowing, and to have demonstrated what they say; and yet whoever shall read over their writings without perceiving the connexion of their proofs, and seeing what they show, though he may understand all their words, yet he is not the more knowing: he may believe, indeed, but does not know what they say; and so is not advanced one jot in mathematical knowledge, by all his reading of those approved mathematicians.

Haste. §. 25. The eagerness and strong bent of the mind after knowledge, if not warily regulated, is often an hindrance to it. It still presses into farther discoveries and new objects, and catches at the

variety of knowledge; and therefore often ſtays not long enough on what is before it, to look into it as it ſhould, for haſte to purſue what is yet out of ſight. He that rides poſt through a country, may be able, from the tranſient view, to tell how in general the parts lie, and may be able to give ſome looſe deſcription of here a mountain, and there a plain; here a moraſs, and there a river; woodland in one part, and ſavannahs in another. Such ſuperficial ideas and obſervations as theſe he may collect in galloping over it: but the more uſeful obſervations of the ſoil, plants, animals, and inhabitants, with their ſeveral ſorts and properties, muſt neceſſarily eſcape him; and it is ſeldom men ever diſcover the rich mines without ſome digging. Nature commonly lodges her treaſure and jewels in rocky ground. If the matter be knotty, and the ſenſe lies deep, the mind muſt ſtop and buckle to it, and ſtick upon it with labour and thought, and cloſe contemplation; and not leave it till it has maſtered the difficulty, and got poſſeſſion of truth. But here care muſt be taken to avoid the other extreme: a man muſt not ſtick at every uſeleſs nicety, and expect myſteries of ſcience in every trivial queſtion, or ſcruple, that he may raiſe. He that will ſtand to pick up and examine every pebble that comes in his way, is as unlikely to return enriched and loaden with jewels, as the other that travelled full ſpeed. Truths are not the better nor the worſe for their obviouſneſs or difficulty, but their value is to be meaſured by their uſefulneſs and tendency. Inſignificant obſervations ſhould not take up any of our minutes, and thoſe that enlarge our view, and give light towards farther and uſeful diſcoveries, ſhould not be neglected, though they ſtop our courſe, and ſpend ſome of our time in a fixed attention.

There is another haſte that does often, and will miſlead the mind if it be left to itſelf, and its own conduct. The underſtanding is naturally forward, not only to learn its knowledge by variety (which makes it ſkip over one to get ſpeedily to another part of knowledge) but alſo eager to enlarge its views, by running too faſt into general obſervations and concluſions, without a due exa-

examination of particulars enough whereon to found those general axioms. This seems to enlarge their stock, but it is of fancies, not realities; such theories built upon narrow foundations stand but weakly, and, if they fall not of themselves, are at least very hardly to be supported against the assaults of opposition. And thus men being too hasty to erect to themselves general notions and ill-grounded theories, find themselves deceived in their stock of knowledge, when they come to examine their hastily assumed maxims themselves, or to have them attacked by others. General observations drawn from particulars, are the jewels of knowledge, comprehending great store in a little room; but they are therefore to be made with the greater care and caution, lest, if we take counterfeit for true, our loss and shame be the greater when our stock comes to a severe scrutiny. One or two particulars may suggest hints of inquiry, and they do well to take those hints; but if they turn them into conclusions, and make them presently general rules, they are forward indeed, but it is only to impose on themselves by propositions assumed for truths without sufficient warrant. To make such observations is, as has been already remarked, to make the head a magazine of materials, which can hardly be called knowledge; or at least it is but like a collection of lumber not reduced to use or order; and he that makes every thing an observation, has the same useless plenty and much more falsehood mixed with it. The extremes on both sides are to be avoided, and he will be able to give the best account of his studies who keeps his understanding in the right mean between them.

Anticipation.

§. 26. Whether it be a love of that which brings the first light and information to their minds, and want of vigour and industry to inquire; or else that men content themselves with any appearance of knowledge, right or wrong; which, when they have once got, they will hold fast: this is visible, that many men give themselves up to the first anticipations of their minds, and are very tenacious of the opinions that first possess them; they are often as fond of their first conceptions as of their first-born, and will

will by no means recede from the judgment they have once made, or any conjecture or conceit which they have once entertained. This is a fault in the conduct of the understanding, since this firmness or rather stiffness of the mind is not from an adherence to truth, but a submission to prejudice. It is an unreasonable homage paid to prepossession, whereby we show a reverence, not to (what we pretend to seek) truth, but what by haphazard we chance to light on, be it what it will. This is visibly a prepposterous use of our faculties, and is a downright prostituting of the mind to resign it thus, and put it under the power of the first comer. This can never be allowed, or ought to be followed, as a right way to knowledge, till the understanding (whose business it is to conform itself to what it finds in the objects without) can, by its own opinionatry, change that, and make the unalterable nature of things comply with its own hasty determinations, which will never be. Whatever we fancy, things keep their course; and the habitudes, correspondencies, and relations, keep the same to one another.

Resignation.

§. 27. Contrary to these, but by a like dangerous excess, on the other side, are those who always resign their judgment to the last man they heard or read. Truth never sinks into these men's minds, nor gives any tincture to them; but, cameleon-like, they take the colour of what is laid before them, and as soon lose and resign it to the next that happens to come in their way. The order wherein opinions are proposed, or received by us, is no rule of their rectitude, nor ought to be a cause of their preference. First or last in this case, is the effect of chance, and not the measure of truth or falsehood. This every one must confess, and therefore should, in the pursuit of truth, keep his mind free from the influence of any such accidents. A man may as reasonably draw cuts for his tenets, regulate his persuasion by the cast of a dye, as take it up for its novelty, or retain it because it had his first assent, and he was never of another mind. Well-weighed reasons are to determine the judgment; those the mind should be always ready to hearken and submit to, and

by their testimony and suffrage, entertain or reject any tenet indifferently, whether it be a perfect stranger, or an old acquaintance.

Practice. §. 28. Though the faculties of the mind are improved by exercise, yet they must not be put to a stress beyond their strength. "Quid valeant "humeri, quid ferre recusent," must be made the measure of every one's understanding, who has a desire not only to perform well, but to keep up the vigour of his faculties; and not to baulk his understanding by what is too hard for it. The mind, by being engaged in a task beyond its strength, like the body, strained by lifting at a weight too heavy, has often its force broken, and thereby gets an unaptness, or an aversion, to any vigorous attempt ever after. A sinew cracked seldom recovers its former strength, or at least the tenderness of the sprain remains a good while after, and the memory of it longer, and leaves a lasting caution in the man, not to put the part quickly again to any robust employment. So it fares in the mind once jaded by an attempt above its power; it either is disabled for the future; or else checks at any vigorous undertaking ever after; at least is very hardly brought to exert its force again on any subject that requires thought and meditation. The understanding should be brought to the difficult and knotty parts of knowledge, that try the strength of thought, and a full bent of the mind, by insensible degrees; and in such a gradual proceeding nothing is too hard for it. Nor let it be objected, that such a slow progress will never reach the extent of some sciences. It is not to be imagined how far constancy will carry a man; however, it is better walking slowly in a rugged way, than to break a leg and be a cripple. He that begins with the calf may carry the ox; but he that will at first go to take up an ox, may so disable himself, as not to be able to lift up a calf after that. When the mind, by insensible degrees, has brought itself to attention and close thinking, it will be able to cope with difficulties, and master them without any prejudice to itself, and then it may go on roundly. Every abstruse problem, every intricate question, will not baffle, discourage, or break

break it. But though putting the mind unprepared upon an unusual stress, that may discourage or damp it for the future, ought to be avoided; yet this must not run it, by an over-great shyness of difficulties, into a lazy sauntering about ordinary and obvious things, that demand no thought or application. This debases and enervates the understanding, makes it weak and unfit for labour. This is a sort of hovering about the surface of things, without any insight into them or penetration; and when the mind has been once habituated to this lazy recumbency and satisfaction on the obvious surface of things, it is in danger to rest satisfied there, and go no deeper; since it cannot do it without pains and digging. He that has for some time accustomed himself to take up with what easily offers itself at first view, has reason to fear he shall never reconcile himself to the fatigue of turning and tumbling things in his mind, to discover their more retired and more valuable secrets.

It is not strange that methods of learning which scholars have been accustomed to in their beginning and entrance upon the sciences, should influence them all their lives, and be settled in their minds by an overruling reverence; especially if they be such as universal use has established. Learners must at first be believers, and their master's rules having been once made axioms to them, it is no wonder they should keep that dignity, and by the authority they have once got, mislead those who think it sufficient to excuse them, if they go out of their way in a well-beaten track.

§. 29. I have copiously enough spoken of the abuse of words in another place, and therefore shall upon this reflection, that the sciences are full of them, warn those that would conduct their understandings right, not to take any term, howsoever authorised by the language of the schools, to stand for any thing till they have an idea of it. A word may be of frequent use, and great credit, with several authors, and be by them made use of as if it stood for some real being; but yet, if he that reads cannot frame any distinct idea of that being, it is certainly to him a mere empty sound without a meaning; and he learns no more by all Words.

that is said of it, or attributed to it, than if it were affirmed only of that bare empty sound. They who would advance in knowledge, and not deceive and swell themselves with a little articulated air, should lay down this as a fundamental rule, not to take words for things, nor suppose that names in books signify real entities in nature, till they can frame clear and distinct ideas of those entities. It will not perhaps be allowed, if I should set down "substantial forms" and "intentional species," as such that may justly be suspected to be of this kind of insignificant terms. But this I am sure, to one that can form no determined ideas of what they stand for, they signify nothing at all; and all that he thinks he knows about them, is to him so much knowledge about nothing, and amounts at most but to be a learned ignorance. It is not without all reason supposed, that there are many such empty terms to be found in some learned writers, to which they had recourse to etch out their systems, where their understandings could not furnish them with conceptions from things. But yet I believe the supposing of some realities in nature, answering those and the like words, have much perplexed some, and quite misled others in the study of nature. That which in any discourse signifies, "I know not what," should be considered "I know not when." Where men have any conceptions, they can, if they are never so abstruse or abstracted, explain them, and the terms they use for them. For our conceptions being nothing but ideas, which are all made up of simple ones: if they cannot give us the ideas their words stand for, it is plain they have none. To what purpose can it be, to hunt after his conceptions, who has none, or none distinct? He that knew not what he himself meant by a learned term, cannot make us know any thing by his use of it, let us beat our heads about it never so long. Whether we are able to comprehend all the operations of nature, and the manners of them, it matters not to inquire; but this is certain, that we can comprehend no more of them, than we can distinctly conceive; and therefore to obtrude terms where we have no distinct conceptions, as if they did contain, or rather conceal some-

something; is but an artifice of learned vanity to cover a defect in an hypothesis or our understandings. Words are not made to conceal, but to declare and show something; where they are by those, who pretend to instruct, otherwise used, they conceal indeed something; but that that they conceal is nothing but the ignorance, errour, or sophistry of the talker; for there is, in truth, nothing else under them.

Wandering.

§. 30. That there is a constant succession and flux of ideas in our minds, I have observed in the former part of this essay; and every one may take notice of it in himself. This, I suppose, may deserve some part of our care in the conduct of our understandings; and I think it may be of great advantage, if we can by use get that power over our minds, as to be able to direct that train of ideas, that so, since there will new ones perpetually come into our thoughts by a constant succession, we may be able by choice so to direct them, that none may come in view, but such as are pertinent to our present inquiry, and in such order as may be most useful to the discovery we are upon; or at least, if some foreign and unsought ideas will offer themselves, that yet we might be able to reject them, and keep them from taking off our minds from its present pursuit, and hinder them from running away with our thoughts quite from the subject in hand. This is not, I suspect, so easy to be done, as perhaps may be imagined; and yet, for aught I know, this may be, if not the chief, yet one of the great differences that carry some men in their reasoning so far beyond others, where they seem to be naturally of equal parts. A proper and effectual remedy for this wandering of thoughts I would be glad to find. He that shall propose such an one, would do great service to the studious and contemplative part of mankind, and perhaps help unthinking men to become thinking. I must acknowledge that hitherto I have discovered no other way to keep our thoughts close to their business, but the endeavouring as much as we can, and by frequent attention and application, getting the habit of attention and application. He that will observe children, will find, that even when they

endeavour their utmoſt, they cannot keep their minds from ſtraggling. The way to cure it, I am ſatisfied, is not angry chiding or beating, for that preſently fills their heads with all the ideas that fear, dread, or confuſion can offer to them. To bring back gently their wandering thoughts, by leading them into the path, and going before them in the train they ſhould purſue, without any rebuke, or ſo much as taking notice (where it can be avoided) of their roving, I ſuppoſe would ſooner reconcile and inure them to attention, than all thoſe rougher methods which more diſtract their thought, and hindering the application they would promote, introduce a contrary habit.

Diſtinction. §. 31. Diſtinction and diviſion are (if I miſtake not the import of the words) very different things; the one being the perception of a difference that nature has placed in things; the other, our making a diviſion where there is yet none; at leaſt, if I may be permitted to conſider them in this ſenſe, I think I may ſay of them, that one of them is the moſt neceſſary and conducive to true knowledge that can be; the other, when too much made uſe of, ſerves only to puzzle and confound the underſtanding. To obſerve every the leaſt difference that is in things argues a quick and clear ſight; and this keeps the underſtanding ſteady, and right in its way to knowledge. But though it be uſeful to diſcern every variety that is to be found in nature, yet it is not convenient to conſider every difference that is in things, and divide them into diſtinct claſſes under every ſuch difference. This will run us, if followed, into particulars, (for every individual has ſomething that differences it from another) and we ſhall be able to eſtabliſh no general truths, or elſe at leaſt ſhall be apt to perplex the mind about them. The collection of ſeveral things into ſeveral claſſes, gives the mind more general and larger views; but we muſt take care to unite them only in that, and ſo far as, they do agree, for ſo far they may be united under the conſideration: for entity itſelf, that comprehends all things, as general as it is, may afford us clear and rational conceptions. If we would weigh and keep in our minds what it is we

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are considering, that would best instruct us when we should, or should not branch into farther distinctions, which are to be taken only from a due contemplation of things; to which there is nothing more opposite than the art of verbal distinctions, made at pleasure in learned and arbitrarily invented terms, to be applied at a venture, without comprehending or conveying any distinct notions; and so altogether fitted to artificial talk, or empty noise in dispute, without any clearing of difficulties, or advance in knowledge. Whatsoever subject we examine and would get knowledge in, we should, I think, make as general and as large as it will bear; nor can there be any danger of this, if the idea of it be settled and determined: For if that be so, we shall easily distinguish it from any other idea, though comprehended under the same name. For it is to fence against the intanglements of equivocal words, and the great art of sophistry which lies in them, that distinctions have been multiplied, and their use thought so necessary. But had every distinct abstract idea a distinct known name, there would be little need of these multiplied scholastic distinctions, though there would be nevertheless as much need still of the mind's observing the differences that are in things, and discriminating them thereby one from another. It is not therefore the right way to knowledge, to hunt after, and fill the head with abundance of artificial and scholastic distinctions, wherewith learned men's writings are often filled: we sometimes find what they treat of so divided and subdivided, that the mind of the most attentive reader loses the sight of it, as it is more than probable the writer himself did; for in things crumbled into dust, it is in vain to affect or pretend order, or expect clearness. To avoid confusion by too few or too many divisions, is a great skill in thinking as well as writing, which is but the copying our thoughts; but what are the boundaries of the mean between the two vicious excesses on both hands, I think is hard to set down in words: clear and distinct ideas is all that I yet know able to regulate it. But as to verbal distinctions received and applied to common terms, i. e. equivocal words, they are more properly, I think, the busi-

neſs of criticiſms and dictionaries than of real knowledge and philoſophy; ſince they, for the moſt part, explain the meaning of words, and give us their ſeveral ſignifications. The dexterous management of terms, and being able to fend and prove with them, I know has and does paſs in the world for a great part of learning; but it is learning diſtinct from knowledge; for knowledge conſiſts only in perceiving the habitudes and relations of ideas one to another, which is done without words; the intervention of a ſound helps nothing to it. And hence we ſee that there is leaſt uſe of diſtinctions where there is moſt knowledge; I mean in mathematics, where men have determined ideas without known names to them; and ſo there being no room for equivocations, there is no need of diſtinctions. In arguing, the opponent uſes as comprehenſive and equivocal terms as he can, to involve his adverſary in the doubtfulneſs of his expreſſions: this is expected, and therefore the anſwerer on his ſide makes it his play to diſtinguiſh as much as he can, and thinks he can never do it too much; nor can he indeed in that way wherein victory may be had without truth and without knowledge. This ſeems to me to be the art of diſputing. Uſe your words as captiouſly as you can in your arguing on one ſide, and apply diſtinctions as much as you can on the other ſide to every term, to nonplus your opponent; ſo that in this ſort of ſcholarſhip, there being no bounds ſet to diſtinguiſhing, ſome men have thought all acuteneſs to have lain in it; and therefore in all they have read or thought on, their great buſineſs has been to amuſe themſelves with diſtinctions, and multiply to themſelves diviſions; at leaſt, more than the nature of the thing required. There ſeems to me, as I ſaid, to be no other rule for this, but a due and right conſideration of things as they are in themſelves. He that has ſettled in his mind determined ideas, with names affixed to them, will be able both to diſcern their differences one from another; which is really diſtinguiſhing: and, where the penury of words affords not terms anſwering every diſtinct idea, will be able to apply proper diſtinguiſhing terms to the comprehenſive and equivocal names he is forced

forced to make use of. This is all the need I know of distinguishing terms; and in such verbal distinctions, each term of the distinction, joined to that whose signification it distinguishes, is but a distinct name for a distinct idea. Where they are so, and men have clear and distinct conceptions that answer their verbal distinctions, they are right, and are pertinent as far as they serve to clear any thing in the subject under consideration. And this is that which seems to me the proper and only measure of distinctions and divisions; which he that will conduct his understanding right, must not look for in the acuteness of invention, nor the authority of writers, but will find only in the consideration of things themselves, whether he is led into it by his own meditations, or the information of books.

An aptness to jumble things together, wherein can be found any likeness, is a fault in the understanding on the other side, which will not fail to mislead it, and by thus lumping of things, hinder the mind from distinct and accurate conceptions of them.

Similies.

§. 32. To which let me here add another near of kin to this, at least in name, and that is letting the mind, upon the suggestion of any new notion, run immediately after similies to make it the clearer to itself; which, though it may be a good way, and useful in the explaining our thoughts to others; yet it is by no means a right method to settle true notions of any thing in ourselves, because similies always fail in some part, and come short of that exactness which our conceptions should have to things, if we would think aright. This indeed makes men plausible talkers; for those are always most acceptable in discourse who have the way to let their thoughts into other men's minds with the greatest ease and facility; whether those thoughts are well formed and correspond with things, matters not; few men care to be instructed but at an easy rate. They, who in their discourse strike the fancy, and take the hearers conceptions along with them as fast as their words flow, are the applauded talkers, and go for the only men of clear thoughts. Nothing contributes so much to this as similies, whereby men think they themselves

selves understand better, because they are the better understood. But it is one thing to think right, and another thing to know the right way to lay our thoughts before others with advantage and clearness, be they right or wrong. Well-chosen similies, metaphors, and allegories, with method and order, do this the best of any thing, because being taken from objects already known, and familiar to the understanding, they are conceived as fast as spoken; and the correspondence being concluded, the thing they are brought to explain and elucidate is thought to be understood too. Thus fancy passes for knowledge, and what is prettily said is mistaken for solid. I say not this to decry metaphor, or with design to take away that ornament of speech; my business here is not with rhetoricians and orators, but with philosophers and lovers of truth; to whom I would beg leave to give this one rule whereby to try whether, in the application of their thoughts to any thing for the improvement of their knowledge, they do in truth comprehend the matter before them really such as it is in itself. The way to discover this is to observe whether, in the laying it before themselves or others, they make use only of borrowed representations, and ideas foreign to the things, which are applied to it by way of accommodation, as bearing some proportion or imagined likeness to the subject under consideration. Figured and metaphorical expressions do well to illustrate more abstruse and unfamiliar ideas which the mind is not yet thoroughly accustomed to; but then they must be made use of to illustrate ideas that we already have, not to paint to us those which we yet have not. Such borrowed and alluśive ideas may follow real and solid truth, to set it off when found; but must by no means be set in its place, and taken for it. If all our search has yet reached no farther than similie and metaphor, we may assure ourselves we rather fancy than know, and have not yet penetrated into the inside and reality of the thing, be it what it will, but content ourselves with what our imaginations, not things themselves, furnish us with.

§. 33.

§. 33. In the whole conduct of the understanding, there is nothing of more moment than to know when and where, and how far to give assent; and possibly there is nothing harder. It is very easily said, and nobody questions it, that giving and with-holding our assent, and the degrees of it, should be regulated by the evidence which things carry with them; and yet we see men are not the better for this rule; some firmly embrace doctrines upon slight grounds, some upon no grounds, and some contrary to appearance: some admit of certainty, and are not to be moved in what they hold: others waver in every thing, and there want not those that reject all as uncertain. What then shall a novice, an inquirer, a stranger do in the case? I answer, use his eyes. There is a correspondence in things, and agreement and disagreement in ideas, discernible in very different degrees, and there are eyes in men to see them, if they please: only their eyes may be dimmed or dazzled, and the discerning sight in them impaired or lost. Interest and passion dazzles; the custom of arguing on any side, even against our persuasions, dims the understanding, and makes it by degrees lose the faculty of discerning clearly between truth and falshood, and so of adhering to the right side. It is not safe to play with errour, and dress it up to ourselves or others in the shape of truth. The mind by degrees loses its natural relish of real solid truth, is reconciled insensibly to any thing that can be dressed up into any feint appearance of it; and if the fancy be allowed the place of judgment at first in sport, it afterwards comes by use to usurp it; and what is recommended by this flatterer (that studies but to please) is received for good. There are so many ways of fallacy, such arts of giving colours, appearances and resemblances by this court-dresser, the fancy, that he who is not wary to admit nothing but truth itself, very careful not to make his mind subservient to any thing else, cannot but be caught. He that has a mind to believe, has half assented already; and he that by often arguing against his own sense, imposes falshood on others, is not far from believing himself. This takes away the great distance there is betwixt truth and

Assent.

and falshood; it brings them almost together, and makes it no great odds, in things that approach so near, which you take; and when things are brought to that pass, passion, or interest, &c. easily, and without being perceived, determine which shall be the right.

Indifferency. §. 34. I have said above, that we should keep a perfect indifferency for all opinions, not wish any of them true, or try to make them appear so; but being indifferent, receive and embrace them according as evidence, and that alone, gives the attestation of truth. They that do thus, i. e. keep their minds indifferent to opinions, to be determined only by evidence, will always find the understanding has perception enough to distinguish between evidence and no evidence, betwixt plain and doubtful; and if they neither give nor refuse their assent but by that measure, they will be safe in the opinions they have. Which being perhaps but few, this caution will have also this good in it, that it will put them upon considering, and teach them the necessity of examining more than they do; without which the mind is but a receptacle of inconsistencies, not the store-house of truths. They that do not keep up this indifferency in themselves for all but truth, not supposed, but evidenced in themselves, put coloured spectacles before their eyes, and look on things through false glasses, and then think themselves excused in following the false appearances, which they themselves put upon them. I do not expect that by this way the assent should in every one be proportioned to the grounds and clearness wherewith every truth is capable to be made out; or that men should be perfectly kept from errour: that is more than human nature can by any means be advanced to; I aim at no such unattainable privilege; I am only speaking of what they should do, who would deal fairly with their own minds, and make a right use of their faculties in the pursuit of truth; we fail them a great deal more than they fail us. It is mismanagement more than want of abilities that men have reason to complain of, and which they actually do complain of in those that differ from them. He that by indifferency for all but truth, suffers not his assent

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to go faster than his evidence, nor beyond it; will learn to examine, and examine fairly instead of presuming, and nobody will be at a loss, or in danger for want of embracing those truths which are necessary in his station and circumstances. In any other way but this, all the world are born to orthodoxy; they imbibe at first the allowed opinions of their country and party, and so never questioning their truth, not one of an hundred ever examines. They are applauded for presuming they are in the right. He that considers is a foe to orthodoxy, because possibly he may deviate from some of the received doctrines there. And thus men, without any industry or acquisition of their own, inherit local truths (for it is not the same every where) and are inured to assent without evidence. This influences farther than is thought; for what one of an hundred of the zealous bigots in all parties, ever examined the tenets he is so stiff in; or ever thought it his business or duty so to do? It is suspected of luke-warmness to suppose it necessary, and a tendency to apostacy to go about it. And if a man can bring his mind once to be positive and fierce for positions, whose evidence he has never once examined, and that in matters of greatest concernment to him; what shall keep him from this short and easy way of being in the right in cases of less moment? Thus we are taught to clothe our minds as we do our bodies, after the fashion in vogue, and it is accounted fantasticalness, or something worse, not to do so. This custom (which who dares oppose?) makes the short-sighted bigots, and the warier sceptics, as far as it prevails: and those that break from it are in danger of heresy: for taking the whole world, how much of it doth truth and orthodoxy possess together? Though it is by the last alone (which has the good luck to be every where) that errour and heresy are judged of: for argument and evidence signify nothing in the case, and excuse no where, but are sure to be borne down in all societies by the infallible orthodoxy of the place. Whether this be the way to truth and right assent, let the opinions, that take place and prescribe in the several habitable parts of the earth, declare. I never saw any reason yet why truth might not be

be trusted on its own evidence: I am sure if that be not able to support it, there is no fence against errour; and then truth and falshood are but names that stand for the same things. Evidence therefore is that by which alone every man is (and should be) taught to regulate his assent, who is then, and then only, in the right way, when he follows it.

Men deficient in knowledge are usually in one of these three states; either wholly ignorant, or as doubting of some proposition they have either embraced formerly, or are at present inclined to; or lastly, they do with assurance hold and profess without ever having examined, and being convinced by well-grounded arguments.

The first of these are in the best state of the three, by having their minds yet in their perfect freedom and indifferency; the likelier to pursue truth the better, having no bias yet clapped on to mislead them.

§. 35. For ignorance, with an indifferency for truth, is nearer to it than opinion with ungrounded inclination, which is the great source of errour; and they are more in danger to go out of the way, who are marching under the conduct of a guide, that it is an hundred to one will mislead them, than he that has not yet taken a step, and is likelier to be prevailed on to inquire after the right way. The last of the three sorts are in the worst condition of all; for if a man can be persuaded and fully assured of any thing for a truth, without having examined, what is there that he may not embrace for truth? and if he has given himself up to believe a lye, what means is there left to recover one who can be assured without examining? To the other two this I crave leave to say, that as he that is ignorant is in the best state of the two, so he should pursue truth in a method suitable to that state; i. e. by inquiring directly into the nature of the thing itself, without minding the opinions of others, or troubling himself with their questions or disputes about it; but to see what he himself can, sincerely searching after truth, find out. He that proceeds upon other principles in his inquiry into any sciences, though he be resolved to examine them and judge of them freely, does yet at least put himself on

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that ſide, and poſt himſelf in a party which he will not quit till he be beaten out; by which the mind is inſenſibly engaged to make what defence it can, and ſo is unawares biaſſed. I do not ſay but a man ſhould embrace ſome opinion when he has examined, elſe he examines to no purpoſe; but the ſureſt and ſafeſt way is to have no opinion at all till he has examined, and that without any the leaſt regard to the opinions or ſyſtems of other men about it. For example, were it my buſineſs to underſtand phyſic, would not the ſafe and readier way be to conſult nature herſelf, and inform myſelf in the hiſtory of diſeaſes and their cures; than eſpouſing the principles of the dogmatiſts, methodiſts, or chemiſts, to engage in all the diſputes concerning either of thoſe ſyſtems, and ſuppoſe it to be true, till I have tried what they can ſay to beat me out of it? Or, ſuppoſing that Hippocrates, or any other book, infallibly contains the whole art of phyſic; would not the direct way be to ſtudy, read, and conſider that book, weigh and compare the parts of it to find the truth, rather than eſpouſe the doctrines of any party? who, though they acknowledge his authority, have already interpreted and wire-drawn all his text to their own ſenſe; the tincture whereof, when I have imbibed, I am more in danger to miſunderſtand his true meaning, than if I had come to him with a mind unprepoſſeſſed by doctors and commentators of my ſect; whoſe reaſonings, interpretation, and language, which I have been uſed to, will of courſe make all chime that way, and make another, and perhaps the genuine meaning of the author ſeem harſh, ſtrained, and uncouth to me. For words having naturally none of their own, carry that ſignification to the hearer, that he is uſed to put upon them, whatever be the ſenſe of him that uſes them. This, I think, is viſibly ſo; and if it be, he that begins to have any doubt of any of his tenets, which he received without examination, ought, as much as he can, to put himſelf wholly into this ſtate of ignorance in reference to that queſtion; and throwing wholly by all his former notions, and the opinions of others, examine, with a perfect indifferency, the queſtion in its ſource; without any inclination to either ſide, or any

regard to his or others unexamined opinions. This I own is no easy thing to do; but I am not inquiring the easy way to opinion, but the right way to truth; which they must follow who will deal fairly with their own understandings and their own souls.

Question. §. 36. The indifferency that I here propose will also enable them to state the question right, which they are in doubt about, without which they can never come to a fair and clear decision of it.

Perseverance. §. 37. Another fruit from this indifferency, and the considering things in themselves abstract from our own opinions and other men's notions and discourses on them, will be, that each man will pursue his thoughts in that method which will be most agreeable to the nature of the thing, and to his apprehension of what it suggests to him; in which he ought to proceed with regularity and constancy, until he come to a well-grounded resolution wherein he may acquiesce. If it be objected that this will require every man to be a scholar, and quit all his other business, and betake himself wholly to study; I answer, I propose no more to any one than he has time for. Some men's state and condition requires no great extent of knowledge; the necessary provision for life swallows the greatest part of their time. But one man's want of leisure is no excuse for the oscitancy and ignorance of those who have time to spare; and every one has enough to get as much knowledge as is required and expected of him, and he that does not that, is in love with ignorance, and is accountable for it.

Presumption. §. 38. The variety of distempers in men's minds is as great as of those in their bodies; some are epidemic, few scape them; and every one too, if he would look into himself, would find some defect of his particular genius. There is scarce any one without some idiosyncrasy that he suffers by. This man presumes upon his parts, that they will not fail him at time of need; and so thinks it superfluous labour to make any provision before-hand. His understanding is to him like Fortunatus's purse, which is always to furnish him, without ever putting any thing into

into it before-hand; and so he sits still satisfied, without endeavouring to store his understanding with knowledge. It is the spontaneous product of the country, and what need of labour in tillage? Such men may spread their native riches before the ignorant; but they were best not come to stress and trial with the skilful. We are born ignorant of every thing. The superficies of things that surround them, make impressions on the negligent, but nobody penetrates into the inside without labour, attention, and industry. Stones and timber grow of themselves, but yet there is no uniform pile with symmetry and convenience to lodge in without toil and pains. God has made the intellectual world harmonious and beautiful without us; but it will never come into our heads all at once; we must bring it home piece-meal, and there set it up by our own industry, or else we shall have nothing but darkness and a chaos within, whatever order and light there be in things without us.

§. 39. On the other side, there are others that depress their own minds, despond at the first difficulty, and conclude that the getting an insight in any of the sciences, or making any progress in knowledge farther than serves their ordinary business, is above their capacities. These sit still, because they think they have not legs to go; as the others I last mentioned do, because they think they have wings to fly, and can soar on high when they please. To these latter one may for answer apply the proverb, "Use legs and have legs." Nobody knows what strength of parts he has till he has tried them. And of the understanding one may most truly say, that its force is greater generally than it thinks, till it is put to it. "Vires que acquirit eundo." Despondency.

And therefore the proper remedy here is but to set the mind to work, and apply the thoughts vigorously to the business; for it holds in the struggles of the mind as in those of war, "Dum putant se vincere vicêre;" A persuasion that we shall overcome any difficulties that we meet with in the sciences, seldom fails to carry us through them. Nobody knows the strength of his

mind, and the force of ſteady and regular application, till he has tried. This is certain, he that ſets out upon weak legs, will not only go farther, but grow ſtronger too than one, who with a vigorous conſtitution and firm limbs, only ſits ſtill.

Something of kin to this, men may obſerve in themſelves, when the mind frights itſelf (as it often does) with any thing reflected on in groſs, and tranſiently viewed confuſedly, and at a diſtance. Things thus offered to the mind, carry the ſhow of nothing but difficulty in them, and are thought to be wrapt up in impenetrable obſcurity. But the truth is, theſe are nothing but ſpectres that the underſtanding raiſes to itſelf to flatter its own lazineſs. It ſees nothing diſtinctly in things remote, and in a huddle; and therefore concludes too faintly, that there is nothing more clear to be diſcovered in them. It is but to approach nearer, and that miſt of our own raiſing that inveloped them will remove; and thoſe that in that miſt appeared hideous giants not to be grappled with, will be found to be of the ordinary and natural ſize and ſhape. Things, that in a remote and confuſed view ſeem very obſcure, muſt be approached by gentle and regular ſteps; and what is moſt viſible, eaſy and obvious in them firſt conſidered. Reduce them into their diſtinct parts; and then in their due order bring all that ſhould be known concerning every one of thoſe parts into plain and ſimple queſtions; and then what was thought obſcure, perplexed, and too hard for our weak parts, will lay itſelf open to the underſtanding in a fair view, and let the mind into that which before it was awed with, and kept at a diſtance from, as wholly myſterious. I appeal to my reader's experience, whether this has never happened to him, eſpecially when, buſy on one thing, he has occaſionally reflected on another. I aſk him whether he has never thus been ſcared with a ſudden opinion of mighty difficulties, which yet have vaniſhed, when he has ſeriouſly and methodically applied himſelf to the conſideration of this ſeeming terrible ſubject; and there has been no other matter of aſtoniſhment left, but that he amuſed himſelf with ſo diſcouraging a proſpect of his own raiſing,

ing, about a matter, which in the handling was found to have nothing in it more strange nor intricate than several other things which he had long since, and with ease mastered. This experience would teach us how to deal with such bugbears another time, which should rather serve to excite our vigour than enervate our industry. The surest way for a learner in this, as in all other cases, is not to advance by jumps and large strides; let that which he sets himself to learn next, be indeed the next; i. e. as nearly conjoined with what he knows already as is possible; let it be distinct but not remote from it: Let it be new, and what he did not know before, that the understanding may advance; but let it be as little at once as may be, that its advances may be clear and sure. All the ground that it gets this way it will hold. This distinct gradual growth in knowledge is firm and sure; it carries its own light with it in every step of its progression in an easy and orderly train; than which there is nothing of more use to the understanding. And though this perhaps may seem a very slow and lingering way to knowledge; yet I dare confidently affirm, that whoever will try it in himself, or any one he will teach, shall find the advances greater in this method, than they would in the same space of time have been in any other he could have taken. The greatest part of true knowledge lies in a distinct perception of things in themselves distinct. And some men give more clear light and knowledge by the bare distinct stating of a question, than others by talking of it in gross, whole hours together. In this, they who so state a question, do no more but separate and disentangle the parts of it one from another, and lay them, when so disentangled, in their due order. This often, without any more ado, resolves the doubt, and shows the mind where the truth lies. The agreement or disagreement of the ideas in question, when they are once separated and distinctly considered, is, in many cases, presently perceived, and thereby clear and lasting knowledge gained; whereas things in gross taken up together, and so lying together in confusion, can produce in the mind but a confused, which in effect is no, knowledge; or at least, when it

comes to be examined and made use of, will prove little better than none. I therefore take the liberty to repeat here again what I have said elsewhere, that in learning any thing as little should be proposed to the mind at once as is possible; and, that being understood and fully mastered, to proceed to the next adjoining part yet unknown; simple, unperplexed proposition belonging to the matter in hand, and tending to the clearing what is principally designed.

Analogy. §. 40. Analogy is of great use to the mind in many cases, especially in natural philosophy; and that part of it chiefly which consists in happy and successful experiments. But here we must take care that we keep ourselves within that wherein the analogy consists. For example, the acid oil of vitriol is found to be good in such a case, therefore the spirit of nitre or vinegar may be used in the like case. If the good effect of it be owing wholly to the acidity of it, the trial may be justified; but if there be something else besides the acidity in the oil of vitriol, which produces the good we desire in the case; we mistake that for analogy, which is not, and suffer our understanding to be misguided by a wrong supposition of analogy where there is none.

Association. §. 41. Though I have, in the second book of my essay concerning human understanding, treated of the association of ideas; yet having done it there historically, as giving a view of the understanding in this as well as its several other ways of operating, rather than designing there to inquire into the remedies that ought to be applied to it; it will, under this latter consideration, afford other matter of thought to those who have a mind to instruct themselves thoroughly in the right way of conducting their understandings; and that the rather, because this, if I mistake not, is as frequent a cause of mistake and errour in us, as perhaps any thing else that can be named; and is a disease of the mind as hard to be cured as any; it being a very hard thing to convince any one that things are not so, and naturally so, as they constantly appear to him.

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By this one eaſy and unheeded miſcarriage of the underſtanding, ſandy and looſe foundations become infallible principles, and will not ſuffer themſelves to be touched or queſtioned; ſuch unnatural connexions become by cuſtom as natural to the mind as ſun and light, fire and warmth go together, and ſo ſeem to carry with them as natural an evidence as ſelf-evident truths themſelves. And where then ſhall one with hopes of ſucceſs begin the cure? Many men firmly embrace falſhood for truth; not only becauſe they never thought otherwiſe; but alſo becauſe, thus blinded as they have been from the beginning, they never could think otherwiſe; at leaſt without a vigour of mind able to conteſt the empire of habit, and look into its own principles; a freedom which few men have the notion of in themſelves, and fewer are allowed the practice of by others; it being the great art and buſineſs of the teachers and guides in moſt ſects to ſuppreſs, as much as they can, this fundamental duty which every man owes himſelf, and is the firſt ſteady ſtep towards right and truth in the whole train of his actions and opinions. This would give one reaſon to ſuſpect, that ſuch teachers are conſcious to themſelves of the falſhood or weakneſs of the tenets they profeſs, ſince they will not ſuffer the grounds whereon they are built to be examined; whereas thoſe who ſeek truth only, and deſire to own and propagate nothing elſe, freely expoſe their principles to the teſt; are pleaſed to have them examined; give men leave to reject them if they can; and if there be any thing weak and unſound in them, are willing to have it detected, that they themſelves, as well as others, may not lay any ſtreſs upon any received propoſition beyond what the evidence of its truths will warrant and allow.

There is, I know, a great fault among all ſorts of people of principling their children and ſcholars; which at laſt, when looked into, amounts to no more, but making them imbibe their teacher's notions and tenets by an implicit faith, and firmly to adhere to them whether true or falſe. What colours may be given to this, or of what uſe it may be when practiſed upon the vulgar, deſtined to labour, and given up to the ſervice of

their bellies, I will not here inquire. But as to the ingenuous part of mankind, whose condition allows them leisure, and letters, and inquiry after truth; I can see no other right way of principling them, but to take heed, as much as may be, that in their tender years, ideas, that have no natural cohesion, come not to be united in their heads; and that this rule be often inculcated to them to be their guide in the whole course of their lives and studies, viz. that they never suffer any ideas to be joined in their understandings, in any other or stronger combination than what their own nature and correspondence give them; and that they often examine those that they find linked together in their minds; whether this association of ideas be from the visible agreement that is in the ideas themselves, or from the habitual and prevailing custom of the mind joining them thus together in thinking.

This is for caution against this evil, before it be thoroughly riveted by custom in the understanding; but he, that would cure it when habit has established it, must nicely observe the very quick and almost imperceptible motions of the mind in its habitual actions. What I have said in another place about the change of the ideas of sense into those of judgment, may be proof of this. Let any one not skilled in painting be told when he sees bottles and tobacco-pipes, and other things so painted, as they are in some places shown; that he does not see protuberances, and you will not convince him but by the touch: He will not believe that by an instantaneous legerdemain of his own thoughts, one idea is substituted for another. How frequent instances may one meet with of this in the arguings of the learned, who not seldom, in two ideas that they have been accustomed to join in their minds, substitute one for the other; and, I am apt to think, often without perceiving it themselves? This, whilst they are under the deceit of it, makes them incapable of conviction, and they applaud themselves as zealous champions for truth, when indeed they are contending for errour. And the confusion of two different ideas, which a customary connexion of them in their minds hath made to them almost

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one, fills their head with false views, and their reasonings with false consequences.

Fallacies.

§. 42. Right understanding consists in the discovery and adherence to truth, and that in the perception of the visible or probable agreement or disagreement of ideas, as they are affirmed and denied one of another. From whence it is evident, that the right use and conduct of the understanding, whose business is purely truth and nothing else, is, that the mind should be kept in a perfect indifferency, not inclining to either side, any farther than evidence settles it by knowledge, or the overbalance of probability gives it the turn of assent and belief; but yet it is very hard to meet with any discourse wherein one may not perceive the author not only maintain (for that is reasonable and fit) but inclined and biassed to one side of the question, with marks of a desire that that should be true. If it be asked me, how authors who have such a bias and lean to it may be discovered? I answer, by observing how in their writings or arguings they are often led by their inclinations to change the ideas of the question, either by changing the terms, or by adding and joining others to them, whereby the ideas under consideration are so varied, as to be more serviceable to their purpose, and to be thereby brought to an easier and nearer agreement, or more visible and remoter disagreement one with another. This is plain and direct sophistry; but I am far from thinking, that wherever it is found it is made use of with design to deceive and mislead the readers. It is visible that men's prejudices and inclinations by this way impose often upon themselves; and their affection for truth, under their prepossession in favour of one side, is the very thing that leads them from it. Inclination suggests and slides into their discourse favourable terms, which introduce favourable ideas; till at last by this means that is concluded clear and evident, thus dressed up, which, taken in its native state, by making use of none but the precise determined ideas, would find no admittance at all. The putting these glosses on what they affirm, these, as they are thought, handsome, easy and graceful explications of

what they are discoursing on, is so much the character of what is called and esteemed writing well, that it is very hard to think that authors will ever be persuaded to leave what serves so well to propagate their opinions, and procure themselves credit in the world, for a more jejune and dry way of writing, by keeping to the same terms precisely annexed to the same ideas; a sour and blunt stiffness tolerable in mathematicians only, who force their way, and make truth prevail by irresistible demonstration.

But yet if authors cannot be prevailed with to quit the looser, though more insinuating ways of writing; if they will not think fit to keep close to truth and instruction by unvaried terms, and plain unsophisticated arguments; yet it concerns readers not to be imposed on by fallacies, and the prevailing ways of insinuation. To do this, the surest and most effectual remedy is to fix in the mind the clear and distinct ideas of the question stripped of words; and so likewise in the train of argumentation, to take up the author's ideas, neglecting his words, observing how they connect or separate those in the question. He that does this will be able to cast off all that is superfluous; he will see what is pertinent, what coherent, what is direct to, what slides by, the question. This will readily show him all the foreign ideas in the discourse, and where they were brought in; and though they perhaps dazzled the writer; yet he will perceive that they give no light nor strength to his reasonings.

This, though it be the shortest and easiest way of reading books with profit, and keeping one's self from being misled by great names or plausible discourses; yet it being hard and tedious to those who have not accustomed themselves to it; it is not to be expected that every one (amongst those few who really pursue truth) should this way guard his understanding from being imposed on by the wilful, or at least undesigned sophistry, which creeps into most of the books of argument. They, that write against their conviction, or that, next to them, are resolved to maintain the tenets of a party they are engaged in, cannot be supposed to reject any arms that

that may help to defend their cause, and therefore such should be read with the greatest caution. And they, who write for opinions they are sincerely persuaded of, and believe to be true, think they may so far allow themselves to indulge their laudable affection to truth, as to permit their esteem of it to give it the best colours, and set it off with the best expressions and dress they can, thereby to gain it the easiest entrance into the minds of their readers, and fix it deepest there.

One of those being the state of mind we may justly suppose most writers to be in, it is fit their readers, who apply to them for instruction, should not lay by that caution which becomes a sincere pursuit of truth, and should make them always watchful against whatever might conceal or misrepresent it. If they have not the skill of representing to themselves the author's sense by pure ideas separated from sounds, and thereby divested of the false lights and deceitful ornaments of speech; this yet they should do, they should keep the precise question steadily in their minds, carry it along with them through the whole discourse, and suffer not the least alteration in the terms, either by addition, subtraction, or substituting any other. This every one can do who has a mind to it; and he that has not a mind to it, it is plain, makes his understanding only the warehouse of other men's lumber; I mean false and unconcluding reasonings, rather than a repository of truth for his own use; which will prove substantial, and stand him in stead, when he has occasion for it. And whether such an one deals fairly by his own mind, and conducts his own understanding right, I leave to his own understanding to judge.

Fundamental verities.

§. 43. The mind of man being very narrow, and so slow in making acquaintance with things, and taking in new truths, that no one man is capable, in a much longer life than ours, to know all truths; it becomes our prudence, in our search after knowledge, to employ our thoughts about fundamental and material questions, carefully avoiding those that are trifling, and not suffering ourselves to be diverted from our main even purpose, by those that are merely

merely incidental. How much of many young men's time is thrown away in purely logical inquiries, I need not mention. This is no better than if a man, who was to be a painter, should spend all his time in examining the threads of the several cloths he is to paint upon, and counting the hairs of each pencil and brush he intends to use in the laying on of his colours. Nay, it is much worse than for a young painter to spend his apprenticeship in such useless niceties; for he, at the end of all his pains to no purpose, finds that it is not painting, nor any help to it, and so is really to no purpose: whereas men designed for scholars have often their heads so filled and warmed with disputes on logical questions, that they take those airy useless notions for real and substantial knowledge, and think their understandings so well furnished with science, that they need not look any farther into the nature of things, or descend to the mechanical drudgery of experiment and inquiry. This is so obvious a mismanagement of the understanding, and that in the professed way to knowledge, that it could not be passed by; to which might be joined abundance of questions, and the way of handling of them in the schools. What faults in particular of this kind, every man is, or may be guilty of, would be infinite to enumerate; it suffices to have shown that superficial and slight discoveries and observations that contain nothing of moment in themselves, nor serve as clues to lead us into farther knowledge, should not be thought worth our searching after.

There are fundamental truths that lie at the bottom, the basis upon which a great many others rest, and in which they have their consistency. These are teeming truths, rich in store, with which they furnish the mind, and, like the lights of heaven, are not only beautiful and entertaining in themselves, but give light and evidence to other things, that without them could not be seen or known. Such is that admirable discovery of Mr. Newton, that all bodies gravitate to one another, which may be counted as the basis of natural philosophy; which, of what use it is to the understanding of the great frame of our solar system, he has to the asto-

niſhment of the learned world ſhown; and how much farther it would guide us in other things, if rightly purſued, is not yet known. Our Saviour's great rule, that "we ſhould love our neighbour as ourſelves," is ſuch a fundamental truth for the regulating human ſociety, that, I think, by that alone, one might without difficulty determine all the caſes and doubts in ſocial morality. Theſe and ſuch as theſe are the truths we ſhould endeavour to find out, and ſtore our minds with. Which leads me to another thing in the conduct of the underſtanding that is no leſs neceſſary, viz.

Bottoming.

§. 44. To accuſtom ourſelves, in any queſtion propoſed, to examine and find out upon what it bottoms. Moſt of the difficulties that come in our way, when well conſidered and traced, lead us to ſome propoſition, which, known to be true, clears the doubt, and gives an eaſy ſolution of the queſtion; whilſt topical and ſuperficial arguments, of which there is ſtore to be found on both ſides, filling the head with variety of thoughts, and the mouth with copious diſcourſe, ſerve only to amuſe the underſtanding, and entertain company without coming to the bottom of the queſtion, the only place of reſt and ſtability for an inquiſitive mind, whoſe tendency is only to truth and knowledge.

For example, if it be demanded, whether the grand ſeignior can lawfully take what he will from any of his people? This queſtion cannot be reſolved without coming to a certainty, whether all men are naturally equal; for upon that it turns; and that truth well ſettled in the underſtanding, and carried in the mind through the various debates concerning the various rights of men in ſociety, will go a great way in putting an end to them, and ſhowing on which ſide the truth is.

Transferring of thoughts.

§. 45. There is ſcarce any thing more for the improvement of knowledge, for the eaſe of life, and the diſpatch of buſineſs, than for a man to be able to diſpoſe of his own thoughts; and there is ſcarce any thing harder in the whole conduct of the underſtanding than to get a full maſtery over it. The mind, in a waking man, has always ſome object

object that it applies itself to; which, when we are lazy or unconcerned, we can easily change, and at pleasure transfer our thoughts to another, and from thence to a third, which has no relation to either of the former. Hence men forwardly conclude, and frequently say, nothing is so free as thought, and it were well it were so; but the contrary will be found true in several instances; and there are many cases wherein there is nothing more resty and ungovernable than our thoughts: They will not be directed what objects to pursue, nor be taken off from those they have once fixed on; but run away with a man in pursuit of those ideas they have in view, let him do what he can.

I will not here mention again what I have above taken notice of, how hard it is to get the mind, narrowed by a custom of thirty or forty years standing to a scanty collection of obvious and common ideas, to enlarge itself to a more copious stock, and grow into an acquaintance with those that would afford more abundant matter of useful contemplation; it is not of this I am here speaking. The inconveniency I would here represent, and find a remedy for, is the difficulty there is sometimes to transfer our minds from one subject to another, in cases where the ideas are equally familiar to us.

Matters, that are recommended to our thoughts by any of our passions, take possession of our minds with a kind of authority, and will not be kept out or dislodged; but, as if the passion that rules were, for the time, the sheriff of the place, and came with all the posse, the understanding is seized and taken with the object it introduces, as if it had a legal right to be alone considered there. There is scarce any body, I think, of so calm a temper who hath not some time found this tyranny on his understanding, and suffered under the inconvenience of it. Who is there almost, whose mind, at some time or other, love or anger, fear or grief, has not so fastened to some clog, that it could not turn itself to any other object? I call it a clog, for it hangs upon the mind so as to hinder its vigour and activity in the pursuit of other contemplations; and advances itself little or not at all in the knowledge of the thing which it so closely hugs

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and constantly pores on. Men thus possessed, are sometimes as if they were so in the worst sense, and lay under the power of an inchantment. They see not what passes before their eyes; hear not the audible discourse of the company; and when by any strong application to them they are roused a little, they are like men brought to themselves from some remote region; whereas in truth they come no farther than their secret cabinet within, where they have been wholly taken up with the puppet, which is for that time appointed for their entertainment. The shame that such dumps cause to well-bred people, when it carries them away from the company, where they should bear a part in the conversation, is a sufficient argument, that it is a fault in the conduct of our understanding, not to have that power over it as to make use of it to those purposes, and on those occasions wherein we have need of its assistance. The mind should be always free and ready to turn itself to the variety of objects that occur, and allow them as much consideration as shall for that time be thought fit. To be engrossed so by one object, as not to be prevailed on to leave it for another that we judge fitter for our contemplation, is to make it of no use to us. Did this state of mind remain always so, every one would, without scruple, give it the name of perfect madness; and whilst it does last, at whatever intervals it returns, such a rotation of thoughts about the same object no more carries us forward towards the attainment of knowledge, than getting upon a mill-horse whilst he jogs on in his circular track would carry a man a journey.

I grant something must be allowed to legitimate passions, and to natural inclinations. Every man, besides occasional affections, has beloved studies, and those the mind will more closely stick to; but yet it is best that it should be always at liberty, and under the free disposal of the man, and to act how and upon what he directs. This we should endeavour to obtain, unless we would be content with such a flaw in our understanding, that sometimes we should be as it were without it; for it is very little better than so in cases where we cannot make use

uſe of it to thoſe purpoſes we would, and which ſtand in preſent need of it.

But before fit remedies can be thought on for this diſeaſe, we muſt know the ſeveral cauſes of it, and thereby regulate the cure, if we will hope to labour with ſucceſs.

One we have already inſtanced in, whereof all men that reflect have ſo general a knowledge, and ſo often an experience in themſelves, that nobody doubts of it. A prevailing paſſion ſo pins down our thoughts to the object and concern of it, that a man paſſionately in love cannot bring himſelf to think of his ordinary affairs, or a kind mother, drooping under the loſs of a child, is not able to bear a part as ſhe was wont in the diſcourſe of the company or converſation of her friends.

But though paſſion be the moſt obvious and general, yet it is not the only cauſe that binds up the underſtanding, and confines it for the time to one object, from which it will not be taken off.

Beſides this, we may often find that the underſtanding, when it has a while employed itſelf upon a ſubject which either chance, or ſome ſlight accident, offered to it, without the intereſt or recommendation of any paſſion; works itſelf into a warmth, and by degrees gets into a career, wherein, like a bowl down a hill, it increaſes its motion by going, and will not be ſtopped or diverted; though, when the heat is over, it ſees all this earneſt application was about a trifle not worth a thought, and all the pains employed about it loſt labour.

There is a third ſort, if I miſtake not, yet lower than this; it is a ſort of childiſhneſs, if I may ſo ſay, of the underſtanding, wherein, during the fit, it plays with and dandles ſome inſignificant puppet to no end, nor with any deſign at all, and yet cannot eaſily be got off from it. Thus ſome trivial ſentence, or a ſcrap of poetry, will ſometimes get into men's heads, and make ſuch a chiming there, that there is no ſtilling of it; no peace to be obtained, nor attention to any thing elſe, but this impertinent gueſt will take up the mind and poſſeſs the thoughts in ſpite of all endeavours to get rid of it. Whether every one hath experimented in them-

themselves this troublesome intrusion of some frisking ideas which thus importune the understanding, and hinder it from being better employed, I know not. But persons of very good parts, and those more than one, I have heard speak and complain of it themselves. The reason I have to make this doubt, is from what I have known in a case something of kin to this, though much odder, and that is of a sort of visions that some people have lying quiet, but perfectly awake, in the dark, or with their eyes shut. It is a great variety of faces, most commonly very odd ones, that appear to them in a train one after another; so that having had just the sight of the one, it immediately passes away to give place to another, that the same instant succeeds, and has as quick an exit as its leader; and so they march on in a constant succession; nor can any one of them by any endeavour be stopped or retained beyond the instant of its appearance, but is thrust out by its follower, which will have its turn. Concerning this fantastical phænomenon I have talked with several people, whereof some have been perfectly acquainted with it, and others have been so wholly strangers to it, that they could hardly be brought to conceive or believe it. I knew a lady of excellent parts, who had got past thirty without having ever had the least notice of any such thing; she was so great a stranger to it, that when she heard me and another talking of it, could scarce forbear thinking we bantered her; but some time after drinking a large dose of dilute tea, (as she was ordered by a physician) going to bed, she told us at next meeting, that she had now experimented what our discourse had much ado to persuade her of. She had seen a great variety of faces in a long train, succeeding one another, as we had described; they were all strangers and intruders, such as she had no acquaintance with before, nor sought after then; and as they came of themselves they went too; none of them stayed a moment, nor could be detained by all the endeavours she could use, but went on in their solemn procession, just appeared and then vanished. This odd phænomenon seems to have a mechanical cause, and to depend upon

upon the matter and motion of the blood or animal spirits.

When the fancy is bound by passion, I know no way to set the mind free and at liberty, to prosecute what thoughts the man would make choice of, but to allay the present passion, or counterbalance it with another; which is an art to be got by study, and acquaintance with the passions.

Those who find themselves apt to be carried away with the spontaneous current of their own thoughts, not excited by any passion or interest, must be very wary and careful in all the instances of it to stop it, and never humour their minds in being thus triflingly busy. Men know the value of their corporeal liberty, and therefore suffer not willingly fetters and chains to be put upon them. To have the mind captivated is, for the time, certainly the greater evil of the two, and deserves our utmost care and endeavours to preserve the freedom of our better part. In this case our pains will not be lost; striving and struggling will prevail, if we constantly, on all such occasions, make use of it. We must never indulge these trivial attentions of thought; as soon as we find the mind makes itself a business of nothing, we should immediately disturb and check it, introduce new and more serious considerations, and not leave till we have beaten it off from the pursuit it was upon. This, at first, if we have let the contrary practice grow to an habit, will perhaps be difficult; but constant endeavours will by degrees prevail, and at last make it easy. And when a man is pretty well advanced, and can command his mind off at pleasure from incidental and undesigned pursuits, it may not be amiss for him to go on farther, and make attempts upon meditations of greater moment, that at the last he may have a full power over his own mind, and be so fully master of his own thoughts, as to be able to transfer them from one subject to another, with the same ease that he can lay by any thing he has in his hand, and take something else that he has a mind to in the room of it. This liberty of mind is of great use both in business and study,

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and he that has got it will have no ſmall advantage of eaſe and diſpatch in all that is the choſen and uſeful employment of his underſtanding.

The third and laſt way which I mentioned the mind to be ſometimes taken up with, I mean the chiming of ſome particular words or ſentence in the memory, and, as it were, making a noiſe in the head, and the like, ſeldom happens but when the mind is lazy, or very looſely and negligently employed. It were better indeed to be without ſuch impertinent and uſeleſs repetitions: any obvious idea, when it is roving careleſsly at a venture, being of more uſe, and apter to ſuggeſt ſomething worth conſideration, than the inſignificant buzz of purely empty ſounds. But ſince the rouſing of the mind, and ſetting the underſtanding on work with ſome degrees of vigour, does for the moſt part preſently ſet it free from theſe idle companions; it may not be amiſs, whenever we find ourſelves troubled with them, to make uſe of ſo profitable a remedy that is always at hand.

SOME THOUGHTS

CONCERNING

READING AND STUDY

FOR A

GENTLEMAN.

SOME THOUGHTS

CONCERNING

READING AND STUDY

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GENTLEMAN.

READING is for the improvement of the underſtanding.

The improvement of the underſtanding is for two ends; firſt, for our own increaſe of knowledge; ſecondly, to enable us to deliver and make out that knowledge to others.

The latter of theſe, if it be not the chief end of ſtudy in a gentleman; yet it is at leaſt equal to the other, ſince the greateſt part of his buſineſs and uſefulneſs in the world is by the influence of what he ſays, or writes to others.

The extent of our knowledge cannot exceed the extent of our ideas. Therefore he, who would be univerſally knowing, muſt acquaint himſelf with the objects of all ſciences. But this is not neceſſary to a gentleman, whoſe proper calling is the ſervice of his country; and ſo is moſt properly concerned in moral and political knowledge; and thus the ſtudies, which more immediately belong to his calling, are thoſe which treat of virtues and vices, of civil ſociety, and the arts of government; and will take in alſo law and hiſtory.

It is enough for a gentleman to be furniſhed with the ideas belonging to his calling, which he will find in the books that treat of the matters above-mentioned.

But the next ſtep towards the improvement of his underſtanding, muſt be, to obſerve the connexion of theſe ideas in the propoſitions, which thoſe books hold forth, and pretend to teach as truths; which till a man can judge, whether they be truths or no, his underſtanding is but little improved; and he doth but think and talk after the books that he hath read, without having any knowledge thereby. And thus men of much reading are greatly learned, but may be little knowing.

The third and laſt ſtep therefore, in improving the underſtanding, is to find out upon what foundation any propoſition advanced bottoms; and to obſerve the connexion of the intermediate ideas, by which it is joined to that foundation, upon which it is erected, or that principle, from which it is derived. This, in ſhort, is right reaſoning; and by this way alone true knowledge is to be got by reading and ſtudying.

When a man, by uſe, hath got this faculty of obſerving and judging of the reaſoning and coherence of what he reads, and how it proves what it pretends to teach; he is then, and not till then, in the right way of improving his underſtanding, and enlarging his knowledge by reading.

But that, as I have ſaid, being not all that a gentleman ſhould aim at in reading, he ſhould farther take care to improve himſelf in the art alſo of ſpeaking, that ſo he may be able to make the beſt uſe of what he knows.

The art of ſpeaking well conſiſts chiefly in two things, viz. perſpicuity and right reaſoning.

Perſpicuity conſiſts in the uſing of proper terms for the ideas or thoughts, which he would have paſs from his own mind into that of another man. It is this, that gives them an eaſy entrance; and it is with delight, that men hearken to thoſe, whom they eaſily underſtand; whereas what is obſcurely ſaid, dying as it is ſpoken, is uſually not only loſt, but creates a prejudice in the hearer, as if he that ſpoke knew not what he ſaid, or was afraid to have it underſtood.

The way to obtain this, is to read ſuch books as are allowed to be writ with the greateſt clearneſs and propriety,

'priety, in the language that a man uſes. An author excellent in this faculty, as well as ſeveral others, is Dr. Tillotſon, late archbiſhop of Canterbury, in all that is publiſhed of his. I have choſen rather to propoſe this pattern, for the attainment of the art of ſpeaking clearly, than thoſe who give rules about it; ſince we are more apt to learn by example, than by direction. But if any one hath a mind to conſult the maſters in the art of ſpeaking and writing, he may find in Tully "De Oratore," and another treatiſe of his called, Orator; and in Quintilian's Inſtitutions; and Boileau's "Traité du Sublime" *; inſtructions concerning this, and the other parts of ſpeaking well.

Beſides perſpicuity, there muſt be alſo right reaſoning; without which, perſpicuity ſerves but to expoſe the ſpeaker. And for the attaining of this, I ſhould propoſe the conſtant reading of Chillingworth, who by his example will teach both perſpicuity, and the way of right reaſoning, better than any book that I know; and therefore will deſerve to be read upon that account over and over again; not to ſay any thing of his argument.

Beſides theſe books in Engliſh, Tully, Terence, Virgil, Livy, and Cæſar's Commentaries, may be read to form one's mind to a reliſh of a right way of ſpeaking and writing.

The books I have hitherto mentioned have been in order only to writing and ſpeaking well; not but that they will deſerve to be read upon other accounts.

The ſtudy of morality, I have above mentioned as that that becomes a gentleman; not barely as a man, but in order to his buſineſs as a gentleman. Of this there are books enough writ both by antient and modern philoſophers; but the morality of the goſpel doth ſo exceed them all, that, to give a man a full knowledge of true morality, I ſhall ſend him to no other book, but the New Teſtament. But if he hath a mind to ſee how far the heathen world carried that ſcience, and whereon they bottomed their ethics, he will be delightfully and

* That treatiſe is a tranſlation from Longinus.

profitably entertained in Tully's Treatiſes "De Officiis."

Politics contains two parts, very different the one from the other. The one, containing the original of ſocieties, and the riſe and extent of political power; the other, the art of governing men in ſociety.

The firſt of theſe hath been ſo bandied amongſt us, for theſe ſixty years backward, that one can hardly miſs books of this kind. Thoſe, which I think are moſt talked of in Engliſh, are the firſt book of Mr. Hooker's "Eccleſiaſtical Polity," and Mr. Algernon Sydney's "Diſcourſes concerning Government." The latter of theſe I never read. Let me here add, "Two Treatiſes of Government," printed in 1690 *; and a Treatiſe of "Civil Polity," printed this year †. To theſe one may add, Puffendorf "De Officio Hominis & Civis," and "De Jure Naturali & Gentium;" which laſt is the beſt book of that kind.

As to the other part of politics, which concerns the art of government; that, I think, is beſt to be learned by experience and hiſtory, eſpecially that of a man's own country. And therefore I think an Engliſh gentleman ſhould be well verſed in the hiſtory of England, taking his riſe as far back as there are any records of it; joining with it the laws that were made in the ſeveral ages, as he goes along in his hiſtory; that he may obſerve from thence the ſeveral turns of ſtate, and how they have been produced. In Mr. Tyrrel's Hiſtory of England, he will find all along thoſe ſeveral authors which have treated of our affairs, and which he may have recourſe to, concerning any point, which either his curioſity or judgment ſhall lead him to inquire into.

With the hiſtory, he may alſo do well to read the antient lawyers; ſuch as Bracton, "Fleta," Henningham, "Mirror of Juſtice," my lord Coke's "Second Inſtitutes," and the "Modus tenendi Parliamentum;" and others of that kind which he may find quoted in

* Theſe two treatiſes are written by Mr. Locke himſelf.

† "Civil Polity. A treatiſe concerning the nature of government," &c. London 1703, in 8vo. Written by Peter Paxton, M. D.

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the late controverſies between Mr. Petit, Mr. Tyrrel, Mr. Atwood, &c. with Dr. Brady; as alſo, I ſuppoſe, in Sedler's Treatiſe of "Rights of the Kingdom, and "Cuſtoms of our Anceſtors," whereof the firſt edition is the beſt; wherein he will find the antient conſtitution of the government of England.

There are two volumes of "State Tracts" printed ſince the revolution; in which there are many things relating to the government of England *.

As for general hiſtory, Sir Walter Raleigh, and Dr. Howel, are books to be had. He, who hath a mind to launch farther into that ocean, may conſult Whear's "Methodus legendi Hiſtorias," of the laſt edition; which will direct him to the authors he is to read, and the method wherein he is to read them.

To the reading of hiſtory, chronology and geography are abſolutely neceſſary.

In geography, we have two general ones in Engliſh, Heylin and Moll; which is the beſt of them, I know not; having not been much converſant in either of them. But the laſt, I ſhould think to be of moſt uſe; becauſe of the new diſcoveries that are made every day, tending to the perfection of that ſcience. Though, I believe, that the countries, which Heylin mentions, are better treated of by him, bating what new diſcoveries ſince his time have added.

Theſe two books contain geography in general, but whether an Engliſh gentleman would think it worth his time to beſtow much pains upon that; though without it he cannot well underſtand a Gazette; it is certain he cannot well be without Camden's "Britannia," which is much enlarged in the laſt Engliſh edition. A good collection of maps is alſo neceſſary.

* We have now two collections of ſtate tracts; one, in two volumes in folio, printed in 1689 and 1692, contains "ſeveral treatiſes relating to the government from the year 1660 to 1689; and the other, in three volumes in folio, printed in 1705, 1706, and 1707, is a "Collection of tracts, publiſhed on occaſion of the late revolution in 1688, and during the reign of K. William III." Theſe collections might have been made more complete and more convenient; eſpecially the firſt, which is extremely defective and incorrect.

To geography, books of travels may be added. In that kind, the collections made by our countrymen, Hackluyt and Purchas, are very good. There is alſo a very good collection made by Thevenot in folio, in French; and by Ramuzio, in Italian; whether tranſlated into Engliſh or no, I know not. There are alſo ſeveral good books of travels of Engliſhmen publiſhed, as Sandys, Roe, Brown, Gage, and Dampier.

There are alſo ſeveral voyages in French, which are very good, as Pyrard *, Bergeron †, Sagard ‡, Bernier ‖, &c. whether all of them are tranſlated into Engliſh, I know not.

There is at preſent a very good "collection of voyages and travels," never before in Engliſh, and ſuch as are out of print; now printing by Mr. Churchill ¶.

There are beſides theſe a vaſt number of other travels; a ſort of books that have a very good mixture of delight and uſefulneſs. To ſet them down all, would take up too much time and room. Thoſe I have mentioned are enough to begin with.

As to chronology, I think Helvicus the beſt for common uſe; which is not a book to be read, but to lie by, and be conſulted upon occaſion. He that hath a mind to look farther into chronology, may get Tallent's "Tables," and Strauchius's "Breviarium Temporum," and may to thoſe add Scaliger "De Emendatione Temporum," and Petavius, if he hath a mind to engage deeper in that ſtudy.

Thoſe, who are accounted to have writ beſt particular parts of our Engliſh hiſtory, are Bacon, of Henry

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* "Voyage de Francois Pyrard de Laval. Contenant ſa navigation aux Indes Orientales, Maldives, Moluques, Breſil." Paris 1619, 8vo, 3d edit.

† "Relation des voyages en Tartarie, &c. Le tout recueilli par Pierre Bergeron. Paris 1634, 8vo."

‡ "Le grand voyage des Hurons, ſitués en l'Amerique, &c. Par F. Gab. Sagard Theodat." Paris 1632, 8vo.

‖ "Memoires de l'empire du Grand Mogol, &c. par Francois Bernier. Paris 1670 & 1671, 3 vol. in 12mo.

¶ That collection of voyages and travels was publiſhed an. 1704, in 4 vol. in fol.

VII;

VII; and Herbert of Henry VIII. Daniel also is commended; and Burnet's "History of the Reformation."

Mariana's "History of Spain," and Thuanus's "History of his own Time," and Philip de Comines; are of great and deserved reputation.

There are also several French and English memoirs and collections, such as la Rochefoucault, Melvil, Rushworth, &c. which give a great light to those who have a mind to look into what hath past in Europe this last age.

To fit a gentleman for the conduct of himself, whether as a private man, or as interested in the government of his country, nothing can be more necessary than the knowledge of men; which, though it be to be had chiefly from experience, and, next to that, from a judicious reading of history; yet there are books that of purpose treat of human nature, which help to give an insight into it. Such are those treating of the passions, and how they are moved; whereof Aristotle in his second book of Rhetoric hath admirably discoursed, and that in a little compass. I think this Rhetoric is translated into English; if not, it may be had in Greek and Latin together.

La Bruyere's "Characters" are also an admirable piece of painting; I think it is also translated out of French into English.

Satyrical writings also, such as Juvenal, and Persius, and above all Horace; though they paint the deformities of men, yet they thereby teach us to know them.

There is another use of reading, which is for diversion and delight. Such are poetical writings, especially dramatic, if they be free from prophaneness, obscenity, and what corrupts good manners; for such pitch should not be handled.

Of all the books of fiction, I know none that equals "Cervantes's History of Don Quixote" in usefulness, pleasantry, and a constant decorum. And indeed no writings can be pleasant, which have not nature at the bottom, and are not drawn after her copy.

There is another sort of books, which I had almost forgot, with which a gentleman's study ought to be well fur-

furniſhed, viz. dictonaries of all kinds. For the Latin tongue, Littleton, Cooper, Calepin, and Robert Stephens's "Theſaurus Linguæ Latinæ," and "Voſſii "Etymologicum Linguæ Latinæ." Skinner's "Lexi-"con Etymologicum," is an excellent one of that kind, for the Engliſh tongue. Cowel's "Interpreter" is uſeful for the law terms. Spelman's "Gloſſary" is a very uſeful and learned book. And Selden's "Titles of "Honour," a gentleman ſhould not be without. Baudrand hath a very good "Geographical Dictionary." And there are ſeveral hiſtorical ones, which are of uſe; as Lloyd's, Hoffman's, Moreri's. And Bayle's incomparable dictionary, is ſomething of the ſame kind. He that hath occaſion to look into books written in Latin ſince the decay of the Roman empire, and the purity of the Latin tongue, cannot be well without Du Cange's "Gloſſarium mediæ & infimæ Latinitatis."

Among the books above ſet down, I mentioned Voſſius's "Etymologicum Linguæ Latinæ;" all his works are lately printed in Holland in ſix tomes. They are fit books for a gentleman's library, containing very learned diſcourſes concerning all the ſciences.

ELEMENTS

OF

NATURAL PHILOSOPHY.

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CHAP. I.

Of Matter and Motion.

MATTER is an extended ſolid ſubſtance; which being comprehended under diſtinct ſurfaces, makes ſo many particular diſtinct bodies.

Motion is ſo well known by the ſight and touch, that to uſe words to give a clear idea of it, would be in vain.

Matter, or body, is indifferent to motion, or reſt.

There is as much force required to put a body, which is in motion, at reſt; as there is to ſet a body, which is at reſt, into motion.

No parcel of matter can give itſelf either motion or reſt, and therefore a body at reſt will remain ſo eternally, except ſome external cauſe puts it in motion; and a body in motion will move eternally, unleſs ſome external cauſe ſtops it.

A body in motion will always move on in a ſtraight line, unleſs it be turned out of it by ſome external cauſe; becauſe a body can no more alter the determination of its motion, than it can begin it, alter or ſtop its motion itſelf.

The ſwitneſs of motion is meaſured by diſtance of place, and length of time wherein it is performed. For inſtance, if A and B, bodies of equal or different bigneſs, move each of them an inch in the ſame time; their motions are equally ſwift; but if A moves two inches, in

in the time whilſt B is moving one inch; the motion of A is twice as ſwift as that of B.

The quantity of motion is meaſured by the ſwiftneſs of the motion, and the quantity of the matter moved, taken together. For inſtance, if A, a body equal to B, moves as ſwift as B; then it hath an equal quantity of motion. If A hath twice as much matter as B, and moves equally as ſwift, it hath double the quantity of motion; and ſo in proportion.

It appears, as far as human obſervation reaches, to be a ſettled law of nature, that all bodies have a tendency, attraction, or gravitation towards one another.

The ſame force, applied to two different bodies, produces always the ſame quantity of motion in each of them. For inſtance, let a boat which with its lading is one ton, be tied at a diſtance to another veſſel, which with its lading is twenty-ſix tons; if the rope that ties them together be pulled, either in the leſs or bigger of theſe veſſels, the leſs of the two, in their approach one to another, will move twenty-ſix feet, while the other moves but one foot.

Wherefore the quantity of matter in the earth being twenty-ſix times more than in the moon; the motion in the moon towards the earth, by the common force of attraction, by which they are impelled towards one another, will be twenty-ſix times as faſt as in the earth; that is, the moon will move twenty-ſix miles towards the earth, for every mile the earth moves towards the moon.

Hence it is, that, in this natural tendency of bodies towards one another, that in the leſſer is conſidered as gravitation; and that in the bigger as attraction; becauſe the motion of the leſſer body (by reaſon of its much greater ſwiftneſs) is alone taken notice of.

This attraction is the ſtrongeſt, the nearer the attracting bodies are to each other; and, in different diſtances of the ſame bodies, is reciprocally in the duplicate proportion of thoſe diſtances. For inſtance, if two bodies, at a given diſtance, attract each other with a certain force, at half the diſtance, they will attract each other

other with four times that force; at one third of the diſtance, with nine times that force; and ſo on.

Two bodies at a diſtance will put one another into motion by the force of attraction; which is inexplicable by us, though made evident to us by experience, and ſo to be taken as a principle in natural philoſophy.

Suppoſing then the earth the ſole body in the univerſe, and at reſt; if God ſhould create the moon, at the ſame diſtance that it is now from the earth; the earth and the moon would preſently begin to move one towards another in a ſtraight line by this motion of attraction or gravitation.

If a body, that by the attraction of another would move in a ſtraight line towards it, receives a new motion any ways oblique to the firſt; it will no longer move in a ſtraight line, according to either of thoſe directions; but in a curve that will partake of both. And this curve will differ, according to the nature and quantity of the forces that concurred to produce it; as, for inſtance, in many caſes it will be ſuch a curve as ends where it began, or recurs into itſelf; that is, makes up a circle, or an ellipſis or oval very little differing from a circle.

CHAP. II.

Of the Univerſe.

TO any one, who looks about him in the world, there are obvious ſeveral diſtinct maſſes of matter, ſeparate from one another; ſome whereof have diſcernible motions. Theſe are the ſun, the fixt ſtars, the comets and the planets, amongſt which this earth, which we inhabit, is one. All theſe are viſible to our naked eyes.

Beſides theſe, teleſcopes have diſcovered ſeveral fixt ſtars, inviſible to the naked eye; and ſeveral other bodies moving about ſome of the planets; all which were inviſible and unknown, before the uſe of perſpective-glaſſes were found.

The vaſt diſtances between theſe great bodies, are called intermundane ſpaces; in which though there may be ſome fluid matter, yet it is ſo thin and ſubtile, and there is ſo little of that in reſpect of the great maſſes that move in thoſe ſpaces, that it is as much as nothing.

Theſe maſſes of matter are either luminous, or opake or dark.

Luminous bodies, are ſuch as give light of themſelves; and ſuch are the ſun and the fixt ſtars.

Dark or opake bodies, are ſuch as emit no light of themſelves, though they are capable of reflecting of it, when it is caſt upon them from other bodies; and ſuch are the planets.

There are ſome opake bodies, as for inſtance the comets, which, beſides the light that they may have from the ſun, ſeem to ſhine with a light that is nothing elſe but an accenſion, which they receive from the ſun, in their near approaches to it, in their reſpective revolutions.

The fixt ſtars are called fixt, becauſe they always keep the ſame diſtance one from another.

The ſun, at the ſame diſtance from us that the fixt ſtars are, would have the appearance of one of the fixt ſtars.

CHAP. III.

Of our Solar Syſtem.

OUR ſolar ſyſtem conſiſts of the ſun, and the planets and comets moving about it.

The planets are bodies, which appear to us like ſtars; not that they are luminous bodies, that is, have light in themſelves; but they ſhine by reflecting the light of the ſun.

They are called planets from a Greek word, which ſignifies wandering; becauſe they change their places, and do not always keep the ſame diſtance with one another, nor with the fixt ſtars, as the fixt ſtars do.

The planets are either primary, or ſecondary.

There

There are ſix primary planets, viz. Mercury, Venus, the Earth, Mars, Jupiter, and Saturn.

All theſe move round the ſun, which is, as it were, the centre of their motions.

The ſecondary planets move round about other planets. Beſides the moon, which moves about the earth; four moons move about Jupiter, and five about Saturn, which are called their ſatellites.

The middle diſtances of the primary planets from the ſun are as follows:

Mercury	Is diſtant from the ſun's centre, about	32,000,000	Statute miles, each 5280 Engliſh and 4943 French feet.
Venus		59,000,000	
The Earth		81,000,000	
Mars		123,000,000	
Jupiter		424,000,000	
Saturn		777,000,000	

The orbits of the planets, and their reſpective diſtances from the ſun, and from one another, together with the orbit of a comet, may be ſeen in the figure of the ſolar ſyſtem hereunto annexed.

The periodical times of each planet's revolution about the ſun are as follows:

		Y.	D.	H.	M.
Mercury	Revolves about the Sun, in the ſpace of	0	88	0	0
Venus		0	225	0	0
The Earth		0	365	5	49
Mars		1	322	0	0
Jupiter		11	319	0	0
Saturn		29	138	0	0

The planets move round about the ſun from weſt to eaſt in the zodiac; or, to ſpeak plainer, are always found amongſt ſome of the ſtars of thoſe conſtellations, which make the twelve ſigns of the zodiac.

The motion of the planets about the ſun is not perfectly circular, but rather elliptical.

The reaſon of their motions in curve lines, is the attraction of the ſun, or their gravitations towards the ſun,

(call it which you pleaſe); and an oblique or ſide-long impulſe or motion.

Theſe two motions or tendencies, the one always endeavouring to carry them in a ſtraight line from the circle they move in, and the other endeavouring to draw them in a ſtraight line to the ſun, makes that curve line they revolve in.

The motion of the comets about the ſun is in a very long ſlender oval: whereof one of the focuſes is the centre of the ſun, and the other very much beyond the ſphere of Saturn.

The moon moves about the earth, as the earth doth about the ſun. So that it hath the centre of its motion in the earth; as the earth hath the centre of its revolution in the ſun, about which it moves.

The moon makes its ſynodical motion about the earth, in 29 days, 12 hours, and about 44 minutes.

It is full moon, when, the earth being between the ſun and the moon, we ſee all the enlightened part of the moon; new moon, when, the moon being between us and the ſun, its enlightened part is turned from us; and half moon, when the moon being in the quadratures, as the aſtronomers call it, we ſee but half the enlightened part.

An eclipſe of the moon is, when the earth, being between the ſun and the moon, hinders the light of the ſun from falling upon, and being reflected by, the moon. If the light of the ſun is kept off from the whole body of the moon, it is a total eclipſe; if from a part only, it is a partial one.

An eclipſe of the ſun is, when the moon, being between the ſun and the earth, hinders the light of the ſun from coming to us. If the moon hides from us the whole body of the ſun, it is a total eclipſe; if not, a partial one.

Our ſolar ſyſtem is diſtant from the fixt ſtars 20,000,000,000 ſemi-diameters of the earth; or, as Mr. Huygens expreſſes the diſtance, in his Coſmotheoros *: the fixt ſtars are ſo remote from the earth, that,

* Chriſtiani Huygenii ΚΟΣΜΟΘΕΩΡΟΣ, ſive de terris cœleſtibus earumque ornatu, conjecturæ, &c. p. m. 137.

if

if a cannon-bullet ſhould come from one of the fixt ſtars with as ſwift a motion as it hath when it is ſhot out of the mouth of a cannon, it would be 700,000 years in coming to the earth.

This vaſt diſtance ſo much abates the attraction to thoſe remote bodies, that its operation upon thoſe of our ſyſtem is not at all ſenſible, nor would draw away or hinder the return of any of our ſolar comets; though ſome of them ſhould go ſo far from the ſun, as not to make the revolution about it in leſs than 1000 years.

It is more ſuitable to the wiſdom, power, and greatneſs of God, to think that the fixt ſtars are all of them ſuns, with ſyſtems of inhabitable planets moving about them, to whoſe inhabitants he diſplays the marks of his goodneſs as well as to us; rather than to imagine that thoſe very remote bodies, ſo little uſeful to us, were made only for our ſake.

CHAP. IV.

Of the Earth, conſidered as a Planet.

THE earth, by its revolution about the ſun in 365 days, 5 hours, 49 minutes, makes that ſpace of time we call a year.

The line, which the centre of the earth deſcribes in its annual revolution about the ſun, is called ecliptic.

The annual motion of the earth about the ſun, is in the order of the ſigns of the zodiac; that is, ſpeaking vulgarly, from weſt to eaſt.

Beſides this annual revolution of the earth about the ſun in the ecliptic, the earth turns round upon its own axis in 24 hours.

The turning of the earth upon its own axis every 24 hours, whilſt it moves round the ſun in a year, we may conceive by the running of a bowl on a bowling-green; in which not only the centre of the bowl hath a progreſſive motion on the green; but the bowl in its going forward, from one part of the green to another, turns round about its own axis.

The turning of the earth on its own axis, makes the difference of day and night; it being day in thoſe parts of the earth which are turned towards the ſun; and night in thoſe parts which are in the ſhade, or turned from the ſun.

The annual revolution of the earth in the ecliptic, is the cauſe of the different ſeaſons, and of the ſeveral lengths of days and nights, in every part of the world, in the courſe of the year.

The reaſon of it, is the earth's going round its own axis in the ecliptic, but at the ſame time keeping every where its axis equally inclined to the plane of the ecliptic, and parallel to itſelf. For the plane of the ecliptic inclining to the plane of the equator, 23 degrees and an half, makes that the earth, moving round in the ecliptic, hath ſometimes one of its poles, and ſometimes the other, nearer the ſun.

If the diameter of the ſun be to the diameter of the earth, as 48 to 1, as by ſome it is accounted; then the diſk of the ſun, ſpeaking "numero rotundo," is above 2000 times bigger than the diſk of the earth; and the globe of the ſun is above 100,000 times bigger than the globe of the earth.

The diſtance of the earth's orbit from the ſun, is above 200,000 ſemi-diameters of the earth.

If a cannon-bullet ſhould come from the ſun, with the ſame velocity it hath when it is ſhot out of the mouth of a cannon, it would be 25 years in coming to the earth.

CHAP. V.

Of the Air and Atmoſphere.

WE have already conſidered the earth as a planet, or one of the great maſſes of matter moving about the ſun; we ſhall now conſider it as it is made up of its ſeveral parts, abſtractedly from its diurnal and annual motions.

The

The exterior part of this our habitable world is the air or atmoſphere; a light, thin fluid, or ſpringy body, that encompaſſes the ſolid earth on all ſides.

The height of the atmoſphere, above the ſurface of the ſolid earth, is not certainly known; but that it doth reach but to a very ſmall part of the diſtance betwixt the earth and the moon, may be concluded from the refraction of the rays coming from the ſun, moon, and other luminous bodies.

Though conſidering that the air we are in, being near 1000 times lighter than water; and that the higher it is, the leſs it is compreſſed by the ſuperior incumbent air, and ſo conſequently being a ſpringy body the thinner it is; and conſidering alſo that a pillar of air of any diameter is equal in weight to a pillar of quickſilver of the ſame diameter of between 29 and 30 inches height; we may infer that the top of the atmoſphere is not very near the ſurface of the ſolid earth.

It may be concluded, that the utmoſt extent of the atmoſphere reaches upwards, from the ſurface of the ſolid earth that we walk on, to a good diſtance above us; firſt, if we conſider that a column of air of any given diameter is equiponderant to a column of quickſilver of between 29 and 30 inches height. Now quickſilver being near 14 times heavier than water, if air was as heavy as water, the atmoſphere would be about 14 times higher than the column of quickſilver, i. e. about 35 feet.

Secondly, if we conſider that air is 1000 times lighter than water, then a pillar of air equal in weight to a pillar of quickſilver of 30 inches high will be 35000 feet; whereby we come to know that the air or atmoſphere is 35000 feet, i. e. near ſeven miles high.

Thirdly, if we conſider that the air is a ſpringy body, and that that, which is neareſt the earth, is compreſſed by the weight of all the atmoſphere that is above it, and reſts perpendicularly upon it; we ſhall find that the air here, near the ſurface of the earth, is much denſer and thicker than it is in the upper parts. For example, if upon a fleece of wool you lay another; the under one will be a little compreſſed by the weight of that which

lies upon it; and ſo both of them by a third, and ſo on; ſo that, if 10000 were piled one upon another, the under one would by the weight of all the reſt be very much compreſſed, and all the parts of it be brought abundantly cloſer together, than when there was no other upon it; and the next to that a little leſs compreſſed, the third a little leſs than the ſecond, and ſo on till it came to the uppermoſt, which would be in its full expanſion, and not compreſſed at all. Juſt ſo it is in the air; the higher you go in it, the leſs it is compreſſed, and conſequently the leſs denſe it is; and ſo the upper part being exceedingly thinner than the lower part, which we breathe in (which is that that is 1000 times lighter than water); the top of the atmoſphere is probably much higher than the diſtance above aſſigned.

That the air near the ſurface of the earth will mightily expand itſelf, when the preſſure of the incumbent atmoſphere is taken off, may be abundantly ſeen in the experiments made by Mr. Boyle in his pneumatic engine. In his "Phyſico-mechanical Experiments," concerning the air, he declares * it probable that the atmoſphere may be ſeveral hundred miles high; which is eaſy to be admitted, when we conſider what he proves in another part of the ſame treatiſe, viz. that the air here about the ſurface of the earth, when the preſſure is taken from it, will dilate itſelf about 152 times.

The atmoſphere is the ſcene of the meteors; and therein is collected the matter of rain, hail, ſnow, thunder, and lightning; and a great many other things obſervable in the air.

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* New Experiments Phyſico-mechanical, touching the ſpring of the air, and its effects; (made for the moſt part in a new pneumatical engine) written .... by the honourable ROBERT BOYLE, Eſq; experiment xxxvi. p. 155. Oxford, 1662, in 4to.

CHAP.

CHAP. VI.

Of Meteors in general.

BESIDES the ſpringy particles of pure air, the atmoſphere is made up of ſeveral ſteams or minute particles of ſeveral ſorts, riſing from the earth and the waters, and floating in the air, which is a fluid body, and though much finer and thinner, may be conſidered in reſpect of its fluidity to be like water, and ſo capable, like other liquors, of having heterogeneous particles floating in it.

The moſt remarkable of them are, firſt, the particles of water raiſed into the atmoſphere, chiefly by the heat of the ſun, out of the ſea and other waters, and the ſurface of the earth; from whence it falls in dew, rain, hail, and ſnow.

Out of the vapours riſing from moiſture, the clouds are principally made.

Clouds do not conſiſt wholly of watery parts; for, beſides the aqueous vapours that are raiſed into the air, there are alſo ſulphureous and ſaline particles that are raiſed up, and in the clouds mixed with the aqueous particles, the effects whereof are ſometimes very ſenſible; as particularly in lightning and thunder, when the ſulphureous and nitrous particles firing break out with that violence of light and noiſe, which is obſervable in thunder, and very much reſembles gun-powder.

That there are nitrous particles raiſed into the air is evident from the nouriſhment which rain gives to vegetables more than any other water; and alſo by the collection of nitre or ſalt-petre in heaps of earth, out of which it has been extracted, if they be expoſed to the air, ſo as to be kept from rain; not to mention other efforts, wherein the nitrous ſpirit in the air ſhows itſelf.

Clouds are the greateſt and moſt conſiderable of all the meteors, as furniſhing matter and plenty to the earth. They conſiſt of very ſmall drops of water, and are elevated a good diſtance above the ſurface of the earth;

earth; for a cloud is nothing but a miſt flying high in the air, as a miſt is nothing but a cloud here below.

How vapours are raiſed into the air in inviſible ſteams by the heat of the ſun out of the ſea, and moiſt parts of the earth, is eaſily underſtood; and there is a viſible inſtance of it in ordinary diſtillations. But how theſe ſteams are collected into drops, which bring back the water again, is not ſo eaſy to determine.

To thoſe that will carefully obſerve, perhaps it will appear probable, that it is by that, which the chymiſts call precipitation; to which it anſwers in all its parts.

The air may be looked on as a clear and pellucid menſtruum, in which the inſenſible particles of diſſolved matter float up and down, without being diſcerned, or troubling the pellucidity of the air; when on a ſudden, as if it were by a precipitation, they gather into the very ſmall but viſible miſty drops that make clouds.

This may be obſerved ſometimes in a very clear ſky; when, there not appearing any cloud, or any thing opake, in the whole horizon, one may ſee on a ſudden clouds gather, and all the hemiſphere overcaſt; which cannot be from the riſing of the new aqueous vapours at that time, but from the precipitation of the moiſture, that in inviſible particles floated in the air, into very ſmall, but very viſible drops, which by a like cauſe being united into greater drops, they become too heavy to be ſuſtained in the air, and ſo fall down in rain.

Hail ſeems to be the drops of rain frozen in their falling.

Snow is the ſmall particles of water frozen before they unite into drops.

The regular figures, which branch out in flakes of ſnow, ſeem to ſhow that there are ſome particles of ſalt mixed with the water, which makes them unite in certain angles.

The rain-bow is reckoned one of the moſt remarkable meteors, though really it be no meteor at all; but the reflection of the ſun-beams from the ſmalleſt drops of a cloud or miſt, which are placed in a certain angle made by the concurrence of two lines, one drawn from the ſun, and the other from the eye to theſe little drops in the

the cloud, which reflect the ſun-beams; ſo that two people, looking upon a rainbow at the ſame time, do not ſee exactly the ſame rainbow.

CHAP. VII.

Of Springs, Rivers, and the Sea.

PART of the water that falls down from the clouds, runs away upon the ſurface of the earth into channels, which convey it to the ſea; and part of it is imbibed in the ſpungy ſhell of the earth, from whence ſinking lower by degrees, it falls down into ſubterranean channels, and ſo under ground paſſes into the ſea; or elſe, meeting with beds of rock or clay, it is hindered from ſinking lower, and ſo breaks out in ſprings, which are moſt commonly in the ſides, or at the bottom of hilly ground.

Springs make little rivulets; thoſe united make brooks; and thoſe coming together make rivers, which empty themſelves into the ſea.

The ſea is a great collection of waters in the deep valleys of the earth. If the earth were all plain, and had not thoſe deep hollows, the earth would be all covered with water; becauſe the water, being lighter than the earth, would be above the earth, as the air is above the water.

The moſt remarkable thing in the ſea is that motion of the water called tides. It is a riſing and falling of the water of the ſea. The cauſe of this is the attraction of the moon, whereby the part of the water in the great ocean, which is neareſt the moon, being moſt ſtrongly attracted, is raiſed higher than the reſt; and the part oppoſite to it on the contrary ſide, being leaſt attracted, is alſo higher than the reſt. And theſe two oppoſite riſes of the ſurface of the water in the great ocean, following the motion of the moon from eaſt to weſt, and ſtriking againſt the large coaſts of the continents that lie in its way; from thence rebounds back again, and ſo makes floods and ebbs in narrow ſeas, and rivers remote

remote from the great ocean. Herein we alſo ſee the reaſon of the times of the tides, and why they ſo conſtantly follow the courſe of the moon.

CHAP. VIII.

Of ſeveral ſorts of Earth, Stones, Metals, Minerals, and other Foſſils.

THIS ſolid globe we live upon is called the earth, though it contains in it a great variety of bodies, ſeveral whereof are not properly earth; which word, taken in a more limited ſenſe, ſignifies ſuch parts of this globe as are capable, being expoſed to the air, to give rooting and nouriſhment to plants, ſo that they may ſtand and grow in it. With ſuch earth as this, the greateſt part of the ſurface of this globe is covered; and it is as it were the ſtore-houſe, from whence all the living creatures of our world have originally their proviſions; for from thence all the plants have their ſuſtenance, and ſome few animals, and from theſe all the other animals.

Of earth, taken in this ſenſe, there are ſeveral ſorts, v. g. common mould, or garden earth, clay of ſeveral kinds, ſandy ſoils.

Beſides theſe, there is medicinal earth; as that which is called terra lemnia, bolus armena, and divers others.

After the ſeveral earths, we may conſider the parts of the ſurface of this globe, which is barren; and ſuch, for the moſt, are ſand, gravel, chalk, and rocks, which produce nothing, where they have no earth mixt amongſt them. Barren ſands are of divers kinds, and conſiſt of ſeveral little irregular ſtones without any earth; and of ſuch there are great deſerts to be ſeen in ſeveral parts of the world.

Beſides theſe, which are moſt remarkable on the ſurface of the earth, there are found deeper, in this globe, many other bodies, which, becauſe we diſcover by digging into the bowels of the earth, are called by one common name, foſſils; under which are comprehended metals,

metals, minerals, or half metals, ſtones of divers kinds, and ſundry bodies that have the texture between earth and ſtone.

To begin with thoſe foſſils which come neareſt the earth; under this head we may reckon the ſeveral ſorts of oker, chalk, that which they call black-lead, and other bodies of this kind, which are harder than earth, but have not the conſiſtency and hardneſs of perfect ſtone.

Next to theſe may be conſidered ſtones of all ſorts; whereof there is almoſt an infinite variety. Some of the moſt remarkable, either for beauty or uſe, are theſe: marble of all kinds, porphyry, granate, free-ſtone, &c. flints, agates, cornelians, pebbles, under which kind come the precious ſtones, which are but pebbles of an exceſſive hardneſs, and when they are cut and poliſhed, they have an extraordinary luſtre. The moſt noted and eſteemed are, diamonds, rubies, amethyſts, emeralds, topazes, opals.

Beſides theſe, we muſt not omit thoſe which, though of not ſo much beauty, yet are of greater uſe, viz. load-ſtones, whetſtones of all kinds, limeſtones, calamine, or lapis calaminaris; and abundance of others.

Beſides theſe, there are found in the earth ſeveral ſorts of ſalts, as eating or common ſalt, vitriol, ſal gemma, and others.

The minerals, or ſemi-metals, that are dug out of the bowels of the earth, are antimony, cinnabar, zink, &c. to which may be added brimſtone.

But the bodies of moſt uſe, that are ſought for out of the depths of the earth, are the metals; which are diſtinguiſhed from other bodies by their weight, fuſibility, and malleableneſs; of which there are theſe ſorts, gold, ſilver, copper, tin, lead, and, the moſt valuable of them all, iron; to which one may join that anomalous body quickſilver, or mercury.

He that deſires to be more particularly informed concerning the qualities and properties of theſe ſubterraneous bodies, may conſult natural hiſtorians and chymiſts.

What lies deeper towards the centre of the earth we know not, but a very little beneath the ſurface of this

globe; and whatever we fetch from under ground is only what is lodged in the ſhell of the earth.

All ſtones, metals, and minerals, are real vegetables; that is, grow organically from proper ſeeds, as well as plants.

CHAP. IX.

Of Vegetables, or Plants.

NEXT to the earth itſelf, we may conſider thoſe that are maintained on its ſurface; which, though they are faſtened to it, yet are very diſtinct from it; and thoſe are the whole tribe of vegetables or plants. Theſe may be divided into three ſorts, herbs, ſhrubs, and trees.

Herbs are thoſe plants whoſe ſtalks are ſoft, and have nothing woody in them, as graſs, ſowthiſtle, and hemlock. Shrubs and trees have all wood in them; but with this difference, that ſhrubs grow not to the height of trees, and uſually ſpread into branches near the ſurface of the earth; whereas trees generally ſhoot up in one great ſtem or body, and then, at a good diſtance from the earth, ſpread into branches; thus gooſeberries, and currants, are ſhrubs; oaks, and cherries, are trees.

In plants, the moſt conſiderable parts are theſe, the root, the ſtalk, the leaves, the flower, and the ſeed. There are very few of them that have not all theſe parts, though ſome there are that have no ſtalk; others that have no leaves; and others that have no flowers. But without ſeed or root I think there are none.

In vegetables, there are two things chiefly to be conſidered, their nouriſhment and propagation.

Their nouriſhment is thus: the ſmall and tender fibres of the roots, being ſpread under ground, imbibe, from the moiſt earth, juice fit for their nouriſhment; this is conveyed by the ſtalk up into the branches, and leaves, through little, and, in ſome plants, imperceptible tubes, and from thence, by the bark, returns again to the root; ſo that there is in vegetables, as well as animals, a circulation of the vital liquor. By what impulſe

impulſe it is moved, is ſomewhat hard to diſcover. It ſeems to be from the difference of day and night, and other changes in the heat of the air; for the heat dilating, and the cold contracting thoſe little tubes, ſuppoſing there be valves in them, it is eaſy to be conceived how the circulation is performed in plants, where it is not required to be ſo rapid and quick as in animals.

Nature has provided for the propagation of the ſpecies of plants ſeveral ways. The firſt and general is by ſeed. Beſides this, ſome plants are raiſed from any part of the root ſet in the ground; others by new roots that are propagated from the old one, as in tulips; others by offsets, and in others, the branches ſet in the ground will take root and grow; and laſt of all, grafting and inoculation, in certain ſorts, are known ways of propagation. All theſe ways of increaſing plants make one good part of the ſkill of gardening; and from the books of gardeners may be beſt learnt.

CHAP. X.

Of Animals.

THERE is another ſort of creatures belonging to this our earth, rather as inhabitants than parts of it. They differ in this from plants, that they are not fixed to any one place, but have a freedom of motion up and down, and, beſides, have ſenſe to guide them in their motions.

Man and brute, divide all the animals of this our globe.

Brutes may be conſidered as either aerial, terreſtrial, aquatic, or amphibious. I call thoſe aerial, which have wings, wherewith they can ſupport themſelves in the air. Terreſtrial, are thoſe, whoſe only place of reſt is upon the earth. Aquatic, are thoſe, whoſe conſtant abode is upon the water. Thoſe are called amphibious, which live freely in the air upon the earth, and yet are obſerved to live long upon the water, as if they were natural inhabitants of that element; though it be worth

the examination to know, whether any of thoſe creatures that live at their eaſe, and by choice, a good while or at any time upon the earth, can live a long time together perfectly under water.

Aerial animals may be ſubdivided into birds, and flies.

Fiſhes, which are the chief part of aquatic animals, may be divided into ſhell-fiſhes, ſcaly fiſhes, and thoſe that have neither apparent ſcales nor ſhells.

And the terreſtrial animals may be divided into quadrupeds or beaſts, reptiles, which have many feet, and ſerpents, which have no feet at all.

Inſects, which in their ſeveral changes belong to ſeveral of the before-mentioned diviſions, may be conſidered together as one great tribe of animals. They are called inſects, from a ſeparation in the middle of their bodies, whereby they are, as it were, cut into two parts, which are joined together by a ſmall ligature; as we ſee in waſps, common flies, and the like.

Beſides all theſe, there are ſome animals that are not perfectly of theſe kinds, but placed, as it were, in the middle betwixt two of them, by ſomething of both; as bats, which have ſomething of beaſts and birds in them.

Some reptiles of the earth, and ſome of aquatics, want one or more of the ſenſes, which are in perfecter animals; as worms, oyſters, cockles, &c.

Animals are nouriſhed by food, taken in at the mouth, digeſted in the ſtomach, and thence by fit veſſels diſtributed over the whole body, as is deſcribed in books of anatomy.

The greateſt part of animals have five ſenſes, viz. ſeeing, hearing, ſmelling, taſting, and feeling. Theſe, and the way of nouriſhment of animals, we ſhall more particularly conſider; becauſe they are common to man with beaſts.

The way of nouriſhment of animals, particularly of man, is by food taken in at the mouth, which being chewed there, is broken and mixed with the ſaliva, and thereby prepared for an eaſier and better digeſtion in the ſtomach.

When the ſtomach has performed its office upon the food, it protrudes it into the guts, by whoſe periſtaltic motion

motion it is gently conveyed along through the guts, and, as it passes, the chyle, which is the nutritive part, is separated from the excrementitious, by the lacteal veins; and from thence conveyed into the blood, with which it circulates till itself be concocted into blood. The blood, being by the vena cava brought into the right ventricle of the heart, by the contraction of that muscle, is driven through the arteria pulmonaris into the lungs; where the constantly inspired air mixing with it, enlivens it; and from thence being conveyed by the vena pulmonaris into the left ventricle of the heart, the contraction of the heart forces it out, and, by the arteries, distributes it into all parts of the body; from whence it returns by the veins into the right ventricle of the heart, to take the same course again. This is called the circulation of the blood; by which life and heat are communicated to every part of the body.

In the circulation of the blood, a good part of it goes up into the head; and by the brains are separated from it, or made out of it, the animal spirits; which, by the nerves, impart sense and motion to all parts of the body.

The instruments of motion are the muscles; the fibres whereof contracting themselves, move the several parts of the body.

This contraction of the muscles is, in some of them, by the direction of the mind, and in some of them without it; which is the difference between voluntary and involuntary motions, in the body.

CHAP. XI.

Of the Five Senses.

OF SEEING.

THE organ of seeing is the eye; consisting of variety of parts wonderfully contrived, for the admitting and refracting the rays of light; so that those that come from the same point of the object, and fall upon different parts of the pupil, are brought to meet

again at the bottom of the eye, whereby the whole object is painted on the retina that is ſpread there.

That which immediately affects the ſight, and produces in us that ſenſation which we call ſeeing, is light.

Light may be conſidered either, firſt, as it radiates from luminous bodies directly to our eyes; and thus we ſee luminous bodies themſelves, as the ſun, or a flame, &c. or ſecondly, as it is reflected from other bodies; and thus we ſee a man, or a picture, by the rays of light reflected from them to our eyes.

Bodies, in reſpect of light, may be divided into three ſorts; firſt, thoſe that emit rays of light, as the ſun and fixt ſtars; ſecondly, thoſe that tranſmit the rays of light, as the air; thirdly, thoſe that reflect the rays of light, as iron, earth, &c. The firſt are called luminous; the ſecond pellucid; and the third opake.

The rays of light themſelves are not ſeen; but by them the bodies, from which they originally come; as the ſun, or a fixt ſtar; or the bodies, from which they are reflected; as a horſe, or a tulip. When the moon ſhines, we do not ſee the rays which come from the ſun to the moon, but by them we ſee the moon, from whence they are reflected.

If the eye be placed in the medium, through which the rays paſs to it, the medium is not ſeen at all; for inſtance, we do not ſee the air through which the rays come to our eyes. But if a pellucid body, through which the light comes, be at a diſtance from our eye, we ſee that body, as well as the bodies, from whence the rays come that paſs through them to come to our eyes. For inſtance, we do not only ſee bodies through a pair of ſpectacles, but we ſee the glaſs itſelf. The reaſon whereof is, that pellucid bodies being bodies, the ſurfaces of which reflect ſome rays of light from their ſolid parts; theſe ſurfaces, placed at a convenient diſtance from the eye, may be ſeen by thoſe reflected rays; as, at the ſame time, other bodies beyond thoſe pellucid ones may be ſeen by the tranſmitted rays.

Opake bodies are of two ſorts, ſpecular, or not ſpecular. Specular bodies, or mirrours, are ſuch opake bodies, whoſe ſurfaces are poliſhed; whereby they, reflecting

ing the rays in the ſame order as they come from other bodies, ſhow us their images.

The rays that are reflected from opake bodies, always bring with them to the eye the idea of colour; and this colour is nothing elſe, in the bodies, but a diſpoſition to reflect to the eye more copiouſly one ſort of rays than another. For particular rays are originally endowed with particular colours; ſome are red, others blue, others yellow, and others green, &c.

Every ray of light, as it comes from the ſun, ſeems a bundle of all theſe ſeveral ſorts of rays; and as ſome of them are more refrangible than others; that is, are more turned out of their courſe, in paſſing from one medium to another; it follows, that after ſuch refraction they will be ſeparated, and their diſtinct colour obſerved. Of theſe, the moſt refrangible are violet, and the leaſt red; and the intermediate ones, in order, are indigo, blue, green, yellow, and orange. This ſeparation is very entertaining, and will be obſerved with pleaſure in holding a priſm in the beams of the ſun.

As all theſe rays differ in refrangibility, ſo they do in reflexibility; that is, in the property of being more eaſily reflected from certain bodies, than from others; and hence ariſe, as hath been ſaid, all the colours of bodies; which are, in a manner, infinite, as an infinite number of compoſitions and proportions, of the original colours, may be imagined.

The whiteneſs of the ſun's light is compounded of all the original colours, mixed in a due proportion.

Whiteneſs, in bodies, is but a diſpoſition to reflect all colours of light, nearly in the proportion they are mixed in the original rays; as, on the contrary, blackneſs is only a diſpoſition to abſorb or ſtifle, without reflection, moſt of the rays of every ſort that fall on the bodies.

Light is ſucceſſively propagated with an almoſt inconceivable ſwiftneſs; for it comes from the ſun, to this our earth, in about ſeven or eight minutes of time, which diſtance is about 80,000,000 Engliſh miles.

Beſides colour, we are ſuppoſed to ſee figure; but, in truth, that which we perceive when we ſee figure, as perceiveable by ſight, is nothing but the termination of colour.

OF HEARING.

NEXT to ſeeing, hearing is the moſt extenſive of our ſenſes. The ear is the organ of hearing, whoſe curious ſtructure is to be learnt from anatomy.

That which is conveyed into the brain by the ear is called ſound; though, in truth, till it come to reach and affect the perceptive part, it be nothing but motion.

The motion, which produces in us the perception of ſound, is a vibration of the air, cauſed by an exceeding ſhort, but quick, tremulous motion of the body, from which it is propagated; and therefore we conſider and denominate them as bodies ſounding.

That ſound is the effect of ſuch a ſhort, briſk, vibrating motion of bodies, from which it is propagated, may be known from what is obſerved and felt in the ſtrings of inſtruments, and the trembling of bells, as long as we perceive any ſound come from them; for as ſoon as that vibration is ſtopt, or ceaſes in them, the perception ceaſes alſo.

The propagation of ſound is very quick, but not approaching that of light. Sounds move about 1140 Engliſh feet in a ſecond of time; and in ſeven or eight minutes of time, they move about one hundred Engliſh miles.

OF SMELLING.

SMELLING is another ſenſe, that ſeems to be wrought on by bodies at a diſtance; though that, which immediately affects the organ, and produces in us the ſenſation of any ſmell, are effluvia, or inviſible particles, that, coming from bodies at a diſtance, immediately affect the olfactory nerves.

Smelling bodies ſeem perpetually to ſend forth effluvia, or ſteams, without ſenſibly waſting at all. Thus a grain of muſk will ſend forth odoriferous particles for ſcores of years together, without its being ſpent; whereby one would conclude that theſe particles are very ſmall; and

and yet it is plain, that they are much groſſer than the rays of light, which have a free paſſage through glaſs; and groſſer alſo than the magnetic effluvia, which paſs freely through all bodies, when thoſe that produce ſmell will not paſs through the thin membranes of a bladder, and many of them ſcarce ordinary white paper.

There is a great variety of ſmells, though we have but a few names for them; ſweet, ſtinking, ſour, rank, and muſty, are almoſt all the denominations we have for odours; though the ſmell of a violet, and of muſk, both called ſweet, are as diſtinct as any two ſmells whatſoever.

OF TASTE.

Taste is the next ſenſe to be conſidered.

The organ of taſte is the tongue and palate.

Bodies that emit light, ſounds, and ſmells, are ſeen, heard, and ſmelt at a diſtance; but bodies are not taſted, but by immediate application to the organ; for till our meat touch our tongues, or palates, we taſte it not, how near ſoever it be.

It may be obſerved of taſtes, that though there be a great variety of them, yet, as in ſmells, they have only ſome few general names; as ſweet, bitter, ſour, harſh, rank, and ſome few others.

OF TOUCH.

The fifth and laſt of our ſenſes is touch; a ſenſe ſpread over the whole body, though it be moſt eminently placed in the ends of the fingers.

By this ſenſe the tangible qualities of bodies are diſcerned; as hard, ſoft, ſmooth, rough, dry, wet, clammy, and the like.

But the moſt conſiderable of the qualities, that are perceived by this ſenſe, are heat and cold.

The due temperament of thoſe two oppoſite qualities, is the great inſtrument of nature, that ſhe makes uſe of in moſt, if not all, her productions.

Heat is a very briſk agitation of the inſenſible parts of the object, which produces in us that ſenſation, from whence we denominate the object hot; ſo what in our ſenſation is heat, in the object is nothing but motion. This appears by the way whereby heat is produced; for we ſee that the rubbing of a braſs nail upon a board will make it very hot; and the axle-trees of carts and coaches are often hot, and ſometimes to a degree, that it ſets them on fire, by the rubbing of the nave of the wheel upon it.

On the other ſide, the utmoſt degree of cold is the ceſſation of that motion of the inſenſible particles, which to our touch is heat.

Bodies are denominated hot and cold in proportion to the preſent temperament of that part of our body to which they are applied; ſo that feels hot to one, which ſeems cold to another; nay, the ſame body, felt by the two hands of the ſame man, may at the ſame time appear hot to the one, and cold to the other; becauſe the motion of the inſenſible particles of it may be more briſk than that of the particles of the other.

Beſides the objects before-mentioned, which are peculiar to each of our ſenſes, as light, and colour of the ſight; ſound of hearing; odours of ſmelling; ſavours of taſting; and tangible qualities of the touch; there are two others that are common to all the ſenſes; and thoſe are pleaſure and pain, which they may receive by and with their peculiar objects. Thus, too much light offends the eye; ſome ſounds delight, and others grate the ear; heat in a certain degree is very pleaſant, which may be augmented to the greateſt torment; and ſo the reſt.

Theſe five ſenſes are common to beaſts with men; nay, in ſome of them, ſome brutes exceed mankind. But men are endowed with other faculties, which far excel any thing that is to be found in the other animals in this our globe.

Memory alſo brutes may be ſuppoſed to have, as well as men.

CHAP.

CHAP. XII.

Of the Underſtanding of Man.

THE underſtanding of man does ſo ſurpaſs that of brutes, that ſome are of opinion brutes are mere machines, without any manner of perception at all. But letting this opinion alone, as ill-grounded, we will proceed to the conſideration of human underſtanding, and the diſtinct operations thereof.

The loweſt degree of it conſiſts in perception, which we have before in part taken notice of, in our diſcourſe of the ſenſes. Concerning which it may be convenient farther to obſerve, that, to conceive a right notion of perception, we muſt conſider the diſtinct objects of it, which are ſimple ideas; v. g. ſuch as are thoſe ſignified by theſe words, ſcarlet, blue, ſweet, bitter, heat, cold, &c. from the other objects of our ſenſes; to which we may add the internal operations of our minds, as the objects of our own reflection, ſuch as are thinking, willing, &c.

Out of theſe ſimple ideas are made, by putting them together, ſeveral compounded or complex ideas; as thoſe ſignified by the words pebble, marygold, horſe.

The next thing the underſtanding doth in its progreſs to knowledge, is to abſtract its ideas, by which abſtraction they are made general.

A general idea is an idea in the mind, conſidered there as ſeparated from time and place; and ſo capable to repreſent any particular being that is conformable to it. Knowledge, which is the higheſt degree of the ſpeculative faculties, conſiſts in the perception of the truth of affirmative, or negative, propoſitions.

This perception is either immediate, or mediate. Immediate perception of the agreement, or diſagreement, of two ideas, is when, by comparing them together in our minds, we ſee, or, as it were, behold, their agreement, or diſagreement. This therefore is called intuitive knowledge. Thus we ſee that red is not green;

that the whole is bigger than a part; and that two and two are equal to four.

The truth of theſe, and the like propoſitions, we know by a bare ſimple intuition of the ideas themſelves, without any more ado; and ſuch propoſitions are called ſelf-evident.

The mediate perception of the agreement, or diſagreement, of two ideas, is when, by the intervention of one or more other ideas, their agreement, or diſagreement, is ſhown. This is called demonſtration, or rational knowledge. For inſtance: The inequality of the breadth of two windows, or two rivers, or any two bodies that cannot be put together, may be known by the intervention of the ſame meaſure, applied to them both; and ſo it is in our general ideas, whoſe agreement or diſagreement may be often ſhown by the intervention of ſome other ideas, ſo as to produce demonſtrative knowledge; where the ideas in queſtion cannot be brought together, and immediately compared, ſo as to produce intuitive knowledge.

The underſtanding doth not know only certain truth; but alſo judges of probability, which conſiſts in the likely agreement, or diſagreement, of ideas.

The aſſenting to any propoſition as probable is called opinion, or belief.

We have hitherto conſidered the great and viſible parts of the univerſe, and thoſe great maſſes of matter, the ſtars, planets, and particularly this our earth, together with the inanimate parts, and animate inhabitants of it; it may be now fit to conſider what theſe ſenſible bodies are made of, and that is of unconceivably ſmall bodies, or atoms, out of whoſe various combinations bigger moleculæ are made: and ſo, by a greater and greater compoſition, bigger bodies; and out of theſe the whole material world is conſtituted.

By the figure, bulk, texture, and motion, of theſe ſmall and inſenſible corpuſcles, all the phænomena of bodies may be explained.

A NEW

A NEW

METHOD

OF A

COMMON-PLACE-BOOK.

TRANSLATED OUT OF THE FRENCH FROM THE SECOND VOLUME OF THE BIBLIOTHEQUE UNIVERSELLE.

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O	a	U	a
	e		e
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P	a	X	a
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R	a	Z	a
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EPISTOLA.]

EPISTOLA.] A letter from Mr. Locke to Mr. 2. Toignard, containing a new and eaſy method of a common-place-book, to which an index of two pages is ſufficient.

AT length, ſir, in obedience to you, I publiſh my "method of a common-place-book." I am aſhamed that I deferred ſo long complying with your requeſt; but I eſteemed it ſo mean a thing, as not to deſerve publiſhing, in an age ſo full of uſeful inventions, as ours is. You may remember, that I freely communicated it to you, and ſeveral others, to whom I imagined it would not be unacceptable: ſo that it was not to reſerve the ſole uſe of it to myſelf, that I declined publiſhing it. But the regard I had to the public diſcouraged me from preſenting it with ſuch a trifle. Yet my obligations to you, and the friendſhip between us, compel me now to follow your advice. Your laſt letter has perfectly determined me to it, and I am convinced that I ought not to delay publiſhing it, when you tell me, that an experience of ſeveral years has ſhowed its uſefulneſs, and ſeveral of your friends, to whom you have communicated it. There is no need I ſhould tell you, how uſeful it has been to me, after five and twenty years experience, as I told you, eight years ſince, when I had the honour to wait on you at Paris, and when I might have been inſtructed, by your learned and agreeable diſcourſe. What I aim at now, by this letter, is to teſtify publicly the eſteem and reſpect I have for you, and to convince you how much I am, ſir, your, &c.

Before I enter on my ſubject, it is fit to acquaint the reader, that this tract is diſpoſed in the ſame manner that the common-place-book ought

3. ought to be diſpoſed. It will be underſtood by reading what follows, what is the meaning of the Latin titles on the top of the backſide of each leaf, and at the bottom [a little below the top] of this page.

EBIONITÆ.] In eorum evangelio, quod ſecundum Hebræos dicebatur, hiſtoria quæ habetur Matth. xix. 16. et alia quædam, erat interpolata in hunc modum: "Dixit ad eum alter divitum, magiſter, "quid bonum faciens vivam? Dixit ei Domi- "nus, legem & prophetas, fac. Reſpondit ad "eum, feci. Dixit ei: vade, vende omnia quæ "poſſides, & divide pauperibus, & veni, ſe- "quere me. Cœpit autem dives ſcalpere caput "ſuum, & non placuit ei. Et dixit ad eum "Dominus: quomodo dicis, legem feci & pro- "phetas? cùm ſcriptum ſit in lege, diliges "proximum tuum ſicut teipſum: & ecce multi "fratres tui filii Abrahæ amicti ſunt ſtercore, "morientes præ fame, & domus tua plena eſt "bonis multis, & non egreditur omnino aliquid "ex eâ ad eos. Et converſus, dixit Simoni, diſ- "cipulo ſuo, ſedenti apud ſe: Simon, fili Johan- "næ, facilius eſt camelum intrare per foramen "acûs, quam divitem in regnum cœlorum." Nimirum hæc ideo immutavit Ebion, quia Chriſtum nec Dei filium, nec νομοθέτην, ſed nudum interpretem legis per Moſem datæ agnoſcebat.

In the Goſpel of the Ebionites, which they called the Goſpel according to the Hebrews, the ſtory, that is in the xixth of St. Matth. and in the 16th and following verſes, was changed after this manner: "One of the rich men ſaid to him: "Maſter, what ſhall I do that I may have life? "Jeſus ſaid to him: Obey the law and the pro- "phets. He anſwered, I have done ſo. Jeſus "ſaid unto him, Go, ſell what thou haſt, divide "it among the poor, and then come and follow "me. Upon which the rich man began to "ſcratch his head, and to diſlike the advice of "Jeſus: and the Lord ſaid unto him, How can "you ſay you have done as the law and the pro-

ADVERSARIORUM METHODUS.] 4. I take a paper book of what ſize I pleaſe. I divide the two firſt pages that face one another by parallel lines into five and twenty equal parts, every fifth line black, the other red. I then cut them perpendicularly by other lines that I draw from the top to the bottom of the page, as you may ſee in the table prefixed. I put about the middle of each five ſpaces one of the twenty letters I deſign to make uſe of, and, a little forward in each ſpace, the five vowels, one below another, in their natural order. This is the index to the whole volume, how big ſoever it may be.

The index being made after this manner, I leave a margin in all the other pages of the book, of about the largeneſs of an inch, in a volume in folio, or a little larger; and, in a leſs volume, ſmaller in proportion.

If I would put any thing in my Common-Place-Book, I find out a head to which I may refer it. Each head ought to be ſome important and eſſential word to the matter in hand, and in that word regard is to be had to the firſt letter, and the vowel that follows it; for upon theſe two letters depends all the uſe of the index.

I omit three letters of the alphabet as of no uſe to me, viz. K. Y. W. which are ſupplied by C. I. U. that are equivalent to them. I put the letter Q. that is always followed with an u. in the fifth ſpace of Z. By throwing Q. laſt in my index, I preſerve the regularity of my index, and diminiſh not in the leaſt its extent; for it ſeldom happens that there is any head begins with Z. u. I have found none in the five and twenty years I have uſed this method. If nevertheleſs it be neceſſary, nothing hinders but that one may make a reference after Q. u. provided it be done with any kind of diſtinction; but for more exactneſs a place may be aſſigned

5. for Q. u. below the index, as I have formerly done. When I meet with any thing, that I think fit to put into my common-place-book, I firſt find a proper head. Suppoſe, for example, that the head be EPISTOLA, I look unto the index for the firſt letter and the following vowel, which in this inſtance are E. i. if in the ſpace marked E. i. there is any number that directs me to the page deſigned for words that begin with an E. and whoſe firſt vowel, after the initial letter, is I; I muſt then write under the word Epiſtola, in that page, what I have to remark. I write the head in large letters, and begin a little way out into the margin, and I continue on the line, in writing what I have to ſay. I obſerve conſtantly this rule, that only the head appears in the margin, and that it be continued on, without ever doubling the line in the margin, by which means the heads will be obvious at firſt ſight.

If I find no number in the index, in the ſpace E. i. I look into my book for the firſt backſide of a leaf that is not written in, which, in a book where there is yet nothing but the index, muſt be p. 2. I write then, in my index after E. i. the number 2. and the head Epiſtola at the top of the margin of the ſecond page, and all that I put under that head, in the ſame page, as you ſee I have done in the ſecond page of this method. From that time the claſs E. i. is wholly in poſſeſſion of the ſecond and third pages.

They are to be employed only on words that begin with an E, and whoſe neareſt vowel is an I, as Ebionitæ (ſee the third page) Epiſcopus, Echinus, Edictum, Efficacia, &c. The reaſon, why I begin always at the top of the backſide of a leaf, and aſſign to one claſs two pages, that face one another, rather than an entire leaf, is, becauſe the heads of the claſs appear

ADVERSARIORUM METHODUS.] all at once, without the
V. trouble of turning over a leaf.
6.

Every time, that I would write a new head, I look first in my index for the characteristic letters of the words, and I see, by the number that follows, what the page is that is assigned to the class of that head. If there is no number, I must look for the first backside of a page that is blank. I then set down the number in the index, and design that page, with that of the right side of the following leaf, to this new class. Let it be, for example, the word Adversaria; if I see no number in the space A. e. I seek for the first backside of a leaf, which being at p. 4. I set down in the space A. e. the number 4. and in the fourth page the head ADVERSARIA, with all that I write under it, as I have already informed you. From this time the fourth page with the fifth that follows is reserved for the class A. e. that is to say, for the heads that begin with an A, and whose next vowel is an E; as for instance, Aer, Aera, Agesilaus, Acheron, &c.

When the two pages designed for one class are full, I look forwards for the next backside of a leaf, that is blank. If it be that which immediately follows, I write at the bottom of the margin, in the page that I have filled, the letter V, that is to say, Verte, turn over; as likewise the same at the top of the next page. If the pages, that immediately follow, are already filled by other classes, I write, at the bottom of the page last filled, V, and the number of the next empty backside of a page. At the beginning of that page I write down the head, under which I go on, with what I had to put in my common-place-book, as if it had been in the same page. At the top of this new backside of a leaf, I set down the number of the page I filled last. By these numbers which refer to one another, the first whereof is at the bottom of one page, and

7. the ſecond is at the beginning of another, one joins matter that is ſeparated, as if there was nothing between them. For, by this reciprocal reference of numbers, one may turn, as one leaf, all thoſe that are between the two, even as if they were paſted together. You have an example of this in the third and tenth pages.

Every time I put a number at the bottom of a page, I put it alſo into the index; but when I put only an V, I make no addition in the index; the reaſon whereof is plain.

If the head is a monoſyllable and begins with a vowel, that vowel is at the ſame time both the firſt letter of the word, and the characteriſtic vowel. Therefore I write the word Ars in A a and Os in O o.

You may ſee by what I have ſaid, that one is to begin to write each claſs of words, on the backſide of a page. It may happen, upon that account, that the backſide of all the pages may be full, and yet there may remain ſeveral pages, on the right hand, which are empty. Now if you have a mind to fill your book, you may aſſign theſe right ſides, which are wholly blank, to new claſſes.

If any one imagines that theſe hundred claſſes are not ſufficient to comprehend all ſorts of ſubjects without confuſion, he may follow the ſame method, and yet augment the number to five hundred, in adding a vowel. But having experienced both the one and the other method, I prefer the firſt; and uſage will convince thoſe, who ſhall try it, how well it will ſerve the purpoſe aimed at; eſpecially if one has a book for each ſcience, upon which one makes collections, or at leaſt two for the two heads, to which one may refer all our knowledge, viz. moral philoſophy, and natural.

You may add a third, which may be called the knowledge of ſigns, which relates to the uſe

V. of

ADVERSARIORUM METHODUS.] of words, and is of
V. much more extent than mere criticiſm.
8.

As to the language, in which one ought to expreſs the heads, I eſteem the Latin tongue moſt commodious, provided the nominative caſe be always kept to, for fear leſt in words of two ſyllables, or in monoſyllables that begin with the vowel, the change, which happens in oblique caſes, ſhould occaſion confuſion. But it is not of much conſequence what language is made uſe of, provided there be no mixture in the heads, of different languages.

To take notice of a place in an author, from whom I quote ſomething, I make uſe of this method: before I write any thing, I put the name of the author in my common-place-book, and under that name the title of the treatiſe, the ſize of the volume, the time and place of its edition, and (what ought never to be omitted) the number of pages that the whole book contains. For example, I put into the claſs M. a. "Mar-" ſhami Canon Chronicus Ægyptiacus, Græcus, " & diſquiſitiones fol." London 1672. p. 626. This number of pages ſerves me for the future to mark the particular treatiſe of this author, and the edition I make uſe of. I have no need to mark the place, otherwiſe than in ſetting down the number of the page from whence I have drawn what I have wrote, juſt above the number of pages contained in the whole volume. You will ſee an example in Acheruſia, where the number 259 is juſt above the number 626, that is to ſay, the number of the page, where I take my matter, is juſt above the number of pages of the whole volume. By this means I not only ſave myſelf the trouble of writing Canon Chronicus Ægyptiacus, &c. but am able by the rule of three to find out the ſame paſſage in any other edition, by looking for the number of its pages;

9. ſince the edition I have uſed, which contains 626, gives me 259. You will not indeed always light on the very page you want, becauſe of the breaches, that are made in different editions of books, and that are not always equal in proportion; but you are never very far from the place you want, and it is better to be able to find a paſſage, in turning over a few pages, than to be obliged to turn over a whole book to find it, as it happens, when the book has no index, or when the index is not exact.

ACHERON.] "Pratum, ficta, mortuorum habitatio, eſt "locus prope Memphin, juxta paludem, quam vocant Acheruſiam, &c." This is a paſſage out of D. Siculus, the ſenſe whereof is this: the fields, where they feign that the dead inhabit, are only a place near Memphis, near a marſh called Acheruſia, about which is a moſt delightful country, where one may behold lakes and foreſts of lotus and calamus. It is with reaſon, that Orpheus ſaid, the dead inhabit theſe places, becauſe there the Egyptians celebrate the greateſt part, and the moſt auguſt, of their funeral ſolemnities. They carry the dead over the Nile, and through the marſh of Acheruſia, and there put them into ſubterraneous vaults. There are a great many other fables, among the Greeks, touching the ſtate of the dead, which very well agree with what is at this day practiſed in Egypt. For they call the boat, in which the dead are tranſported, Baris; and a certain piece of money is given to the ferry-man for a paſſage, who, in their language, is called Charon. Near this place is a temple of Hecate in the ſhades, &c. and the gates of Cocytus and Lethe, ſhut up with bars of braſs. There are other gates, which are called the gates of truth, with the ſtatue of juſtice before them, which has no head. Marſham. $\frac{259}{626}$.

EBIONITÆ.] " phets direct you? since it is written in the
V. 3. " law, Thou shalt love thy neighbour as thyself;
10. " and there are many of thy brethren, children
" of Abraham, who are almost naked, and who
" are ready to die with hunger, while thy house
" is full of good things, and yet thou givest
" them no help nor assistance. And turning
" himself towards Simon, his disciple, who sat
" near him: Simon, son of Johanna, said he,
" it is easier for a camel to go through the eye
" of a needle, than for a rich man to enter into
" the kingdom of heaven." Ebion changed this passage, because he did not believe Jesus Christ to be the son of God, nor a law-giver, but a mere interpreter of the law of Moses. Grotius $\frac{333}{1000}$.

II.

Hæretici.] " Noſtrum igitur fuit, eligere & optare
12. " meliora, ut ad veſtram correctionem auditum
" haberemus, non in contentione & æmulatione
" & perſecutionibus, ſed manſuetè conſolando,
" benevolè hortando, leniter diſputando, ſicut
" ſcriptum eſt, ſervum autem Domini not opor-
" tet litigare, ſed mitem eſſe ad omnes, docibi-
" lem, patientem, in modeſtia corripientem di-
" verſa ſentientes. Noſtrum ergo fuit velle has
" partes expetere: Dei eſt volentibus & peten-
" tibus donare quòd bonum eſt. Illi in vos
" ſæviant qui neſciunt cum quo labore verum
" inveniatur, & quam difficile caveantur errores.
" Illi in vos ſæviant, qui neſciunt quam rarum
" & arduum ſit carnalia phantaſmata piæ mentis
" ſerenitate ſuperare. Illi in vos ſæviant, qui
" neſciunt cum quantâ difficultate ſanetur oculus
" interioris hominis, ut poſſit intueri ſolem
" ſuum;——Illi in vos ſæviant, qui neſciunt
" quibus ſuſpiriis & gemitibus fiat, ut ex quan-
" tulacunque parte poſſit intelligi Deus. Poſ-
" tremo, illi in vos ſæviant, qui nullo tali errore
" decepti ſunt, quali vos deceptos vident. In
" catholicâ enim eccleſiâ, ut omittam ſinceriſſi-
" mam ſapientiam, ad cujus cognitionem pauci
" ſpirituales in hâc vitâ perveniunt, ut eam ex
" minimâ quidem parte, quia homines ſunt, ſed
" tamen ſine dubitatione, cognoſcant: cæterum
" quippe turbam non intelligendi vivacitas, ſed
" credendi ſimplicitas tutiſſimam facit." Auguſtinus, Tom. vi. col. 116. fol. Baſiliæ 1542, contra Epiſt. Manichæi, quam vocant fundamenti.

" We were of opinion, that other methods
" were to be made choice of, and that, to re-
" cover you from your errours, we ought not to
" perſecute you with injuries and invectives, or
" any ill treatment, but endeavour to procure
" your attention, by ſoft words and exhorta-
" tions, which would ſhow the tenderneſs we
" have for you: according to that paſſage of
" holy

13. " holy writ, " the ſervant of the Lord ought " not to love ſtrife and quarrels, but to be gen- " tle, affable, and patient towards all mankind, " and to reprove with modeſty thoſe who differ " from him in opinion."—" Let them only treat " you with rigour, who know not how difficult " it is to find out the truth, and avoid errour. " Let thoſe treat you with rigour, who are ig- " norant how rare and painful a work it is calmly " to diſſipate the carnal phantoms, that diſturb " even a pious mind. Let thoſe treat you with " rigour, who are ignorant of the extreme diffi- " culty that there is to purify the eye of the in- " ward man, to render him capable of ſeeing " the truth, which is the ſun, or light of the " ſoul. Let thoſe treat you with rigour, who " have never felt the ſighs and groans that a ſoul " muſt have before it can obtain any knowledge " of the divine Being. To conclude, let thoſe " treat you with rigour who never have been " ſeduced into errours, near a-kin to thoſe you " are engaged in. I paſs over in ſilence that " pure wiſdom, which but a few ſpiritual men " attain to in this life; ſo that though they know " but in part, becauſe they are men; yet never- " theleſs they know what they do know with " certainty: for, in the catholic church, it is " not penetration of mind, nor profound know- " ledge, but ſimplicity of faith, which puts men " in a ſtate of ſafety.

" Barbari quippe homines Romanæ, imo po- " tius humanæ eruditionis expertes, qui nihil " omnino ſciunt, niſi quod à doctoribus ſuis " audiunt: quod audiunt hoc ſequuntur, ac ſic " neceſſe eſt eos qui totius literaturæ ac ſcientiæ " ignari, ſacramentum divinæ legis doctrina, " magis quam lectione, cognoſcunt, doctrinam " potius retinere, quam legem. Itaque eis tra- " ditio magiſtrorum ſuorum & doctrina invete- " rata, quaſi lex eſt, qui hoc ſciunt, quod do-

V. 16. centur,

CONFESSIO FIDEI.] " Periculoſum nobis admodum at-
14. " que etiam miſerabile eſt, tot nunc fides ex-
" iſtere, quot voluntates: & tot nobis doctrinas
" eſſe, quot mores: & tot cauſas blaſphemia-
" rum pullulare, quot vitia ſunt: dum aut ita
" fides ſcribuntur, ut volumus, aut, ita ut volu-
" mus, intelliguntur. Et cum ſecundum unum
" Deum & unum Dominum, & unum baptiſma,
" etiam fides una ſit, excidimus ab eâ fide, quæ
" ſola eſt: & dum plures fiant, id eſſe cœpe-
" runt, ne ulla ſit; conſcii enim nobis invicem
" ſumus, poſt Nicæni conventûs ſynodum, nihil
" aliud quam fidem ſcribi. Dum in verbis
" pugna eſt, dum de novitatibus quæſtio eſt,
" dum de ambiguis occaſio eſt, dum de autori-
" bus querela eſt, dum de ſtudiis certamen eſt,
" dum in conſenſu difficultas eſt, dum alter alteri
" anathema eſſe cæpit, prope jam nemo eſt
" Chriſti, &c. Jam vero proximi anni fides,
" quid jam de immutatione in ſe habet? Pri-
" mum, quæ homouſion decernit taceri: ſequens
" rurſum, quæ homouſion decernit & prædicat.
" Tertium deinceps, quæ ouſiam ſimpliciter à
" patribus præſumptam, per indulgentiam ex-
" cuſat. Poſtremum quartum, quæ non excu-
" ſat, ſed condemnat, &c. De ſimilitudine au-
" tem filii Dei ad Deum patrem, quod miſera-
" bilis noſtri temporis eſt fides, ne non ex toto,
" ſed tantum ex portione ſit ſimilis? Egregii
" ſcilicet arbitri cœleſtium ſacramentorum con-
" quiſitores, inviſibilium myſteriorum profeſ-
" ſionibus de fide Dei calumniamur, annuas at-
" que menſtruas de Deo fides decernimus, de-
" cretis pœnitemus, pœnitentes defendimus, de-
" fenſos anathematizamus, aut in noſtri aliena
" aut in alienis noſtra damnamus, & mordentes
" invicem, jam abſumpti ſumus invicem." Hi-
larius, p. 211. in lib. ad Conſtantium Auguſ-
tum. Baſil. 1550, fol.

" It is a thing equally deplorable and dange-
" rous, that there are at preſent as many creeds

" as

15. " as there are opinions among men, as many " doctrines as inclinations; and as many four- " ces of blaſphemy, as there are faults among " us; becauſe we make creeds arbitrarily, and " explain them as arbitrarily. And as there is " but one faith; ſo there is but one only God, " one Lord, and one baptiſm. We renounce " this one faith, when we make ſo many diffe- " rent creeds; and that diverſity is the reaſon " why we have no true faith among us. We " cannot be ignorant that, ſince the council of " Nice, we have done nothing but made creeds. " And while we fight againſt words, litigate " about new queſtions, diſpute about equivocal " terms, complain of authors, that every one " may make his own party triumph; while we " cannot agree, while we anathematiſe one an- " other, there is hardly one that adheres to " Jeſus Chriſt. What change was there not in " the creed laſt year! The firſt council ordained " a ſilence upon the homouſion; the ſecond " eſtabliſhed it, and would have us ſpeak; the " third excuſes the fathers of the council, and " pretends they took the word ouſia ſimply; " the fourth condemns them, inſtead of excuſing " them. With reſpect to the likeneſs of the " Son of God to the Father, which is the faith " of our deplorable times, they diſpute whether " he is like in whole, or in part. Theſe are rare " folks to unravel the ſecrets of heaven. Ne- " verthelefs it is for theſe creeds, about inviſible " myſteries, that we calumniate one another, " and for our belief in God. We make creeds " every year, nay every moon we repent of what " we have done, we defend thoſe that repent, we " anathematiſe thoſe we defended. So we con- " demn either the doctrine of others in ourſelves, " or our own in that of others, and, reciprocally " tearing one another to pieces, we have been " the cauſe of each other's ruin."

HÆRETICI.] " centur. Hæretici ergo ſunt, ſed non
V. 13. " ſcientes. Denique apud nos ſunt hæretici,
16. " apud ſe non ſunt. Nam in tantum ſe catho-
" licos eſſe judicant, ut nos ipſos titulo hæreticæ
" appellationis infament. Quod ergo illi nobis
" ſunt & hoc nos illis. Nos eos injuriam divinæ
" generationi facere certi ſumus, quod minorem
" patre filium dicant. Illi nos injurioſos patri
" exiſtimant, quia æquales eſſe credamus. Veritas
" apud nos eſt; ſed illi apud ſe eſſe præſumunt.
" Honor Dei apud nos eſt: ſed illi hoc arbi-
" trantur, honorem divinitatis eſſe quod credunt.
" Inofficioſi ſunt, ſed illis hoc eſt ſummum re-
" ligionis officium. Impii ſunt, ſed hoc putant
" eſſe veram pietatem. Errant ergo, ſed bono
" animo errant, non odio ſed affectu Dei, ho-
" norare ſe dominum atque amare credentes.
" Quamvis non habeant rectam fidem, illi ta-
" men hoc perfectam Dei æſtimant caritatem.
" Qualiter pro hoc ipſo falſæ opinionis errore
" in die judicii puniendi ſunt, nullus ſcire poteſt
" niſi judex. Interim idcirco eis, ut reor, pa-
" tientiam Deus commodat, quia videt eos, etſi
" non rectè credere, affectu tamen piæ opinio-
" nis errare. Salvinus. $\frac{162}{339}$.

This biſhop ſpeaks here of the Arian Goths and Vandals: " They are, ſays he, Barbarians,
" who have no tincture of the Roman politeneſs,
" and who are ignorant of what is very com-
" monly known among other men, and only
" know what their doctors have taught them,
" and follow what they have heard them ſay.
" Men ſo ignorant as theſe find themſelves un-
" der a neceſſity of learning the myſteries of the
" goſpel, rather by the inſtructions that are given
" them, than by books."

" The tradition of their doctors and the re-
" ceived doctrines are the only rule they follow,
" becauſe they know nothing but what they
" have taught them. They are then heretics,
" but they know it not. They are ſo in our

account,

17. " account, but they believe it not; and think
" themſelves ſo good catholics, that they treat
" us as heretics, judging of us as we do of them.
" We are perſuaded that they believe amiſs con-
" cerning the divine generation, when they
" maintain the ſon is inferior to the Father;
" and they imagine that we rob the Father of
" his glory who believe them both to be equal.
" We have the truth on our ſide, and they pre-
" tend it is on theirs. We give to God his due
" honour, and they think they honour him bet-
" ter. They fail in their duty, but they ima-
" gine they perform perfectly well; and they
" make true piety to conſiſt in what we call im-
" pious. They are in a miſtake, but with a
" great deal of ſincerity; and it is ſo far from
" being an effect of their hatred, that it is a
" mark of their love of God, ſince, by what they
" do, they imagine they ſhow the greateſt reſpect
" for the Lord, and zeal for his glory. There-
" fore, though they have not true faith, they
" nevertheleſs look upon that which they have
" as a perfect love of God. It belongs only to
" the judge of the univerſe to know how theſe
" men will be puniſhed for their errours at the
" laſt day. Yet I believe God will ſhow com-
" paſſion towards them, becauſe he ſees their
" heart is more right than their belief, and that,
" if they are miſtaken, it is their piety made
" them err.

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